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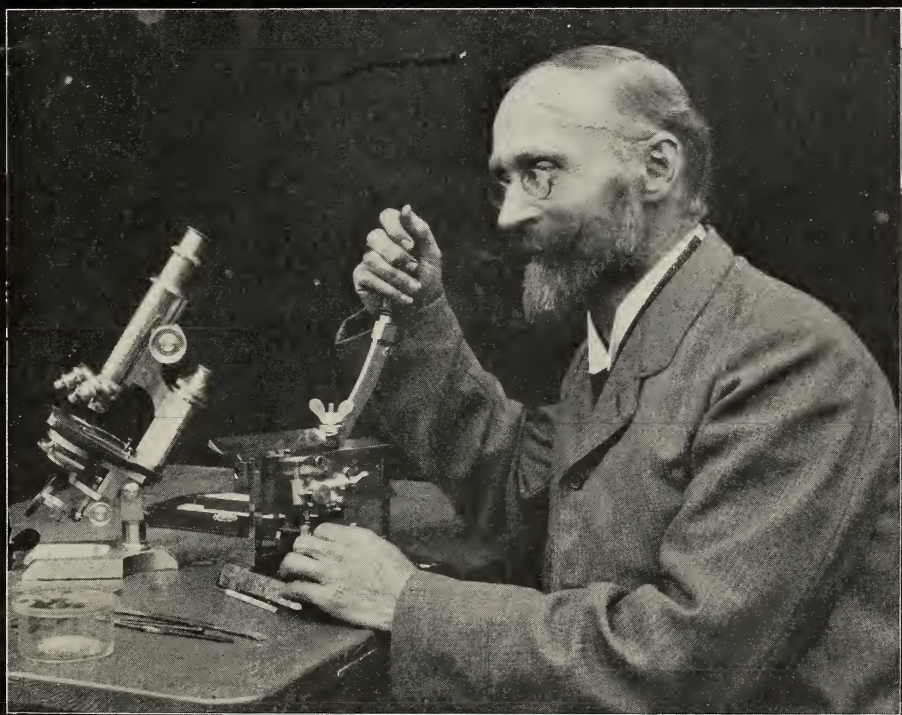
JAN 26 1909

# Gleanings in Bee Culture

VOL. XXXVII

January 15, 1909

No. 2



*Dr. Brunnich, of Switzerland, in his laboratory.*

PUBLISHED BY

THE A. I. ROOT COMPANY, MEDINA, OHIO, U. S. A.



# **Important Announcement.**

## **GOOD NEWS**

**. . to . .**

**All Students and Lovers of Nature, and to  
All Interested in Education.**

**The Establishment of ARCADIA  
on Unique Lines as a**

**GREAT NATURE-STUDY INSTITUTION.**

(Through the aid of a philanthropist whose  
name is withheld by request.)

Arcadia is to be a "village" of portable buildings devoted to various phases of natural science. The buildings are to be arranged in the form of a court covering more than a half-acre of ground. There is to be an astronomical observatory, "Home" of The Agassiz Association, biological laboratories, vivaria, aquaria, Clearing House (for circulating specimens), pet-houses, insectary, photograph gallery, experimental rooms, offices, lecture hall, etc. Within the court made by the surrounding buildings are to be a garden and plant-beds for experimental purposes.

In brief, it is to be an epitome of the essential features of zoological park, biological laboratories, and experimental horticultural grounds.

If the experiment proves a success upon two years' trial, it is promised that the entire equipment will be rebuilt in larger fire-proof buildings (with more extended equipments for study and experiment). The tests of success are the co-operation and interest of naturalists of all ages in all parts of the world. Full particulars in the January number of "The Guide to Nature," Stamford, Conn. Single numbers, 15c. Subscription for one year, \$1.50.

**EDWARD F. BIGELOW, Director of Arcadia, Stamford, Conn.**



# A YEAR'S WORK IN AN OUT-APIARY

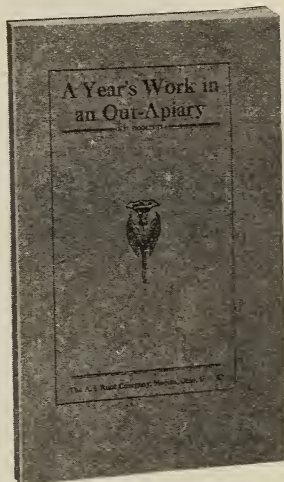
.. OR ..

An average of 114½ pounds of honey  
per colony, in a poor season,  
and how it was done.

First edition, Dec., 1908, 1000 copies.  
Second edition, Jan., 1909, 3000 copies.

By G. M. DOOLITTLE

Author of "Scientific Queen-Rearing."



Mention has already been made of this book in our reading-columns; but there is such an unusual interest in it that we call attention to it once more.

To understand the scope of the work better, please notice that it contains the following chapters:

- Chapter I. An average of 114½ pounds of section honey per colony in a poor season, and how it was done.
- " II. Same, continued.
- " III. Bloom time.
- " IV. How to control swarms when running for comb honey.
- " V. A simple and reliable plan for making increase.
- " VI. How to save unnecessary lifting in taking off filled supers of honey.
- " VII. Taking off the surplus; what to do with the unfinished sections, preparation for the buckwheat flow.
- " VIII. Progress in the supers.
- " IX. A simple way to put on escapes without lifting.
- " X. Taking off the Honey and storing it at the outyard.
- " XI. Same, continued.
- " XII. Closing words; further suggestions to the plans given in the preceding chapters.

The author says in the preface:

While the book is intended for the specialist, it is none the less desirable for the plain, every-day bee-keeper, with his one home apiary, or for the amateur with his five to ten colonies; and because this book is for the specialist in bee-keeping I have not gone into first principles or the A B C of our pursuit, as the specialist has passed these rudimentary things long ago. There are plenty of good books before one, and all who are desirous of learning of the foundation structure, therefore, have no need of repeating here. The amateur should certainly procure, read, and digest one or more of these books upon entering the ranks of apiculture.

What Mr. W. Z. Hutchinson, editor of *The Bee-keepers' Review*, says:

"A Year's Work in an Out-apiary" is packed full of the most valuable information that has ever been given to bee-keepers. Like a few other books, it is a difficult one to review. It is so boiled down and condensed that there is very little that can be left out. I am going to do the best I can at it, but I'll say right here that every bee-keeper would do much better to buy the book and read it in its entirety. While the book is really a record of one year's work (12 visits) in an out-apiary, in which, during a poor season (1905), 114½ pounds of section honey per colony were secured, it is descriptive of a plan that was perfected during some ten or fifteen years of previous experimenting. To put the whole thing in a nut-shell, it tells how to manage an out-apiary for the most profitable production of comb honey, and, at the same time, prevent all swarming.

## SPECIAL OFFER NO. D1:

GLEANINGS IN BEE CULTURE, one year (new or renewal subscriptions), \$1.00  
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Total . . . . . \$1.50

OUR PRICE for the above for 60 days, or until March 15, \$1.00

## SPECIAL OFFER NO. D2:

GLEANINGS IN BEE CULTURE, six month's trial . . . \$ .25  
One copy of A YEAR'S WORK IN AN OUT-APIARY . . . . .50

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If you are already a subscriber to GLEANINGS, and your subscription is paid, and you want to get the book, take advantage of offer No. D2 by ordering the book for yourself and a six month's trial to GLEANINGS for some one of your bee-keeping friends who is not now a subscriber.

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## Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

**INDIANAPOLIS.**—As a rule, the honey market is dull during December; but the demand is holding up remarkably well this season. Producers are not now offering honey freely; and while wholesale houses are well stocked, the indications are that honey will be scarce before the arrival of the new crop. Some fancy white comb is being offered by producers at 12½; No. 1 white at 12; white clover, extracted, in 5-gallon cans, at 7. Some amber honey is being offered, but the demand is so slight that the prices are irregular. Beeswax is steady at 28 cts. cash, or 30 in exchange for merchandise.

Jan. 9.

WALTER S. POWDER, Indianapolis.

**CHICAGO.**—There is no material change in the honey business from what we reported in our last quotations. The honey trade is still very quiet. We quote extra-fancy white comb honey at 14 to 14½; fancy No. 1 white, 13 to 14; No. 2 white and light amber, 11 to 12½; other inferior grades at correspondingly less prices. White clover and basswood extracted are in good demand in 60-lb. cans, two cans to the case at 7½ to 8; in barrels, ½ ct. per lb. less. Bright beeswax, 30 to 32.

Chicago, Jan. 8.

S. T. FISH &amp; CO.

**ZANESVILLE.**—Though the local honey market is exceedingly dull, some shipments are being made to points out of the State, which would indicate that the demand elsewhere is not far from normal. No. 1 to fancy white comb brings in a wholesale way \$3.50 per case of 24 sections. Apparently little honey is being offered by producers, and stocks are rather low. The jobbing trade would pay 13 to 14 cents for No. 1 to fancy white, and 7 to 8 for extracted. For clean yellow beeswax I offer 29 cts. cash, 30 in exchange for supplies.

Jan. 9.

ZANESVILLE, O.

**SAN FRANCISCO.**—There is little or no demand for outside markets at present, and the local market is well cleaned up, nothing of the fancy grades being offered. Notwithstanding a steady jobbing demand, the price has shown no change for some time. A lot of comb honey, of the white and light-amber grades from Nevada, is now in the market, and is moving off at 9 to 13 cts. White comb, 15; white extracted, 7 to 8; light amber, 6½ to 7; dark amber, 4½ to 5½; candied, 4½ to 5½.

Pacific Rural Press, Jan. 2.

**COLUMBUS.**—The market is somewhat better, but the demand is not as good as usual. We quote fancy white comb at 14; No. 1, 13; No. 2, 12; amber, 11.

Jan. 9.

EVANS &amp; TURNER, Columbus, O.

**BOSTON.**—White fancy comb honey, 15; No. 1 ditto, 14; No. 2, 10. White fancy extracted, 9; light-amber, ditto, 8; amber, 7. Beeswax, 30.

Jan. 10.

BLAKE-LEE CO., 4 Chatham Row, Boston, Mass.

**SCHENECTADY.**—But very little is doing in comb honey, with quite a stock on our market. We do not look for any improvement before February. Extracted is in better demand, especially buckwheat, and stock is pretty well cleaned up. Prices are unchanged.

Jan. 9.

CHAS. MACCULLOCH, Schenectady, N. Y.

**BUFFALO.**—The honey market here is about at a standstill. I never saw honey selling so slowly. It is being offered at 1 to 2 cts. less than a month ago, and even that does not start it to moving. It is a case of wait and see what will happen later. We quote No. 1 to fancy clover, comb, 13 to 14; same, No. 2, 10 to 11; No. 1 buckwheat, 11 to 12; No. 2, 9 to 10; white extracted, 7½ to 9; dark, 6 to 7; jelly-tumblers, white, per dozen, 80 to 90 cents. Beeswax, yellow, 28 to 30.

Jan. 8.

W. C. TOWNSEND, Buffalo, N. Y.

**CINCINNATI.**—Up to this writing, the demand for honey has not brightened as we had anticipated; however, it is rather early; and since other lines of business are growing better, the honey business as well will show an improvement in a comparatively short time. Amber honey in barrels is selling at from 5¾ to 7½ according to quality and quantity. Table honey is selling slowly at 6½ to 9; fancy white comb honey, 14½ to 15 by the single case. For good to choice yellow beeswax we are paying 27 cash and 29 in trade, delivered here.

Jan. 8.

THE FRED W. MUTH CO., Cincinnati, O.

**NEW YORK.**—The market for comb honey is quiet, and the demand has slackened considerably during the last few weeks. While the market is not overstocked, there are sufficient quantities to meet any reasonable demand. The trade in comb honey has not been up to that of former years, and while the No. 1 and fancy have been in fair demand, off grades have been neglected right along, and are almost impossible to sell at fair value. We look for a fair trade during the next three months, and think we shall be able to dispose of our present holdings at fair prices. We quote, nominally, No. 1 and fancy white, 13 to 15; off grades, 11 to 12; amber and dark, 10 to 11. The demand for extracted has also fallen off to a considerable extent, and prices are gradually declining. We quote California white sage, 8½ to 9; light amber, 7½ to 8; amber, 6½ to 7; white clover, 7½ to 8; lower grades and dark, 6 to 7; Southern in barrels, 60 to 75 per gallon, according to quality. Owing to the condition of the market we do not encourage shipments unless parties wanting to ship write to us first, stating quantity, quality, and style of package; then we will advise them at once whether we think we are in position to handle their honey to advantage or not. Beeswax is in fair demand at 28 to 30, according to quality.

Jan. 8.

HILDRETH &amp; SEGELKEN, New York.

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Will furnish frames, shipping-cases, and carriers for re-ship-  
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# GLEANINGS IN BEE CULTURE

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## BIG PRICES FOR STRAWBERRIES PREDICTED.

People who remember the dreadful days of 1871, when, as a consequence of the drouth of that year, Chicago was fire-swept and all but destroyed, and several towns in Michigan and Wisconsin were at the same time wiped out of existence, declared during the early days of the autumn of 1908 that the drouth of the present season could be compared only with that time. But in 1871 the drouth was broken early in October, while that of 1908 remained unbroken at the beginning of winter. Not since July has enough rain fallen to more than lay the dust, and this statement is true of a major portion of the United States.

The effects of the drouth were felt in few lines of production where the crops were ripened or practically out of danger before the present drouth became very acute. But in the case of other crops, and especially in the case of nursery stock of the nature of plants, vines, and bushes, the season has been the most destructive ever known. Many nurserymen whose practice it has been for years to ship strawberry-plants for fall setting were compelled to notify their customers that they had no stock last year (1908) that could be used for that purpose, and many of them are now looking askance at the slim prospect ahead for strawberry-plants for spring setting.

One effect of this situation will be, of course, to send the price of plants to a somewhat higher point than has ever before been reached, as the scarcity of plants has made it necessary for the nurserymen to raise prices to save themselves. But another effect will be to make the strawberry itself a scarce article, because so many of the growers who have failed to take especial care of their plants during the drouth will find themselves out of business. Nurserymen are looking forward to a tremendous business in plants in 1910 as a result of these conditions, and The R. M. Kellogg Co., at Three Rivers, Mich., write us that they will set out 110 acres next spring, so confident are they that there will be an unprecedented demand for plants in 1910.

## OLDS' SEEDS FOR HARDINESS.

In many parts of this country Old's seeds are regarded with high favor on account of their reliability and truthness to name. This is more particularly true of sections where the climatic conditions are very severe and trying on vegetation, and hardy

plants alone survive the struggle. Seeds from mild climates will not answer the purpose where hardness is the main requirement, and yet much of the seed now sold is grown in California and in Europe, where the conditions are not at all similar to our Eastern, Central, and Northwestern States. For these reasons we think our readers who are in want of good hardy seeds will again welcome the appearance of the L. L. Olds' advertisement in these columns. It is our opinion that Olds' catalog is a good safe guide to order from.

## A VAST BUSINESS.

The Cyphers Incubator Co., Buffalo, N. Y., is always to the front. It is constantly forging ahead, and its new catalog always contains *new* ideas as well as accurate descriptions of *new* inventions. In fact, the annual catalog of this company is always something out of the ordinary. For 1909 it will contain plain descriptions of their new fire-proofed insurable incubators and brooders. There will also be complete accounts of electrically heated incubators, which are certainly something new, and there will be descriptions of incubators holding respectively 8000 and 40,000 eggs. Surely these must be worth going a long distance to see, for the Cyphers people actually have these machines in operation. But if we can not go to inspect these wonders we can send for the great 212-page catalog describing them, which this great concern supplies free. This book alone is worth 50 cents, for it is no mere catalog of things to sell. The 1909 edition has numerous beautiful illustrations of America's greatest fowls, including Paderewski's celebrated pen of five, for which he paid Mr. Kellestrass \$7500. Not only so, but there are fine articles on feeding, laying records, incubating, brooding, and "What the Foultry Business is." After reading this book we think you will conclude the American poultry industry is something great, and you will feel proud you have a share in it. Furthermore, we feel certain that you will make up your mind to give the Cyphers Incubator Co. a fair share of your patronage in future if you have not done so previously. Enterprise of this kind deserves reward and encouragement, and we believe the readers of GLEANINGS will recognize this as well as we do when their attention is called to it.



# THE BEST ISSUE.

It is impossible to have all of the numbers of a journal of equal value, or of the same interest; occasionally there will come an issue that seems to stand head and shoulders above most of its predecessors. I think that an editor is a pretty fair judge of the comparative values of the different issues of his own journal, and it seems to me as though the *Review* for January reaches the high-water mark, both in subject matter, as regards value of information, and readableness, as well as typographical beauty. One quite important change is begun in this issue, and that is the use of an expensive paper called "cameo plate;" it has a soft, velvety surface, is not "shiny," yet it shows up a

half-tone engraving better than any other paper that is made. Pictures printed on this paper are very clear, yet have a softness that reminds one of a painting.

I wish that every reader of GLEANINGS could see a copy of this issue. Never mind if you have seen other copies of the *Review*, send ten cents for this number, and with it will be sent two other issues, also a four-page circular containing some clubbing offers that will both surprise and please you. The ten cents may apply on a subscription if you send one later.

W. Z. HUTCHINSON, - - Flint, Michigan.

## DOMESTIC ECONOMY

. or .

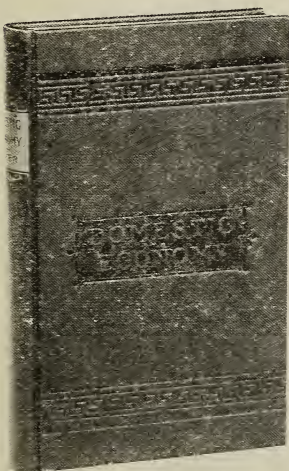
### How to Make Hard Times Good and Good Times Better.

This book is designed to aid in the successful management of the affairs of the family, the home, and the individual.

It is a fine cloth-bound octavo volume of 283 pages, well printed, and how well the author has succeeded in covering the field, may be seen from the following:

#### CONTENTS

Introduction .....	5-8	Chapter XIX.—Sweets .....	160-164
Chapter I.—Home .....	9-19	Chapter XX.—Pickles .....	165-167
Chapter II.—Economy in General, 20-24		Chapter XXI.—Desserts .....	168-171
Chapter III.—Education .....	35-46	Chapter XXII.—Family Expenses, 172-177	
Chapter IV.—Occupation .....	47-58	Chapter XXIII.—Constitution—How to Have a Good, 178-184	
Chapter V.—Recreation .....	59-63	Chapter XXIV.—Mother and Child, 185-198	
Chapter VI.—Influences of Families and Individuals .....	64-69	Chapter XXV.—Children .....	199-206
Chapter VII.—Arithmetic—Accounts, 70-74		Chapter XXVI.—Exercise .....	207-213
Chapter VIII.—Time—Use and Misuse, 75-82		Chapter XXVII.—Care of body—External, 214-226	
Chapter IX.—Fuel .....	83-86	Chapter XXVIII.—Accidents, 227-235	
Chapter X.—Clothing .....	87-97	Chapter XXIX.—Causes of Disease in General, 236-247	
Chapter XI.—Pets and Pests .....	98-101	Chapter XXX.—Causes and Prevention of Disease, 248-253	
Chapter XII.—Housekeeping .....	102-115	Chapter XXXI.—Diseases—Causes and Prevention, Infectious and Contagious, 254-268	
Chapter XIII.—Food .....	116-130	Chapter XXXII.—Causes and Prevention of Disease Inherited, 269-276	
Chapter XIV.—Drink .....	131-138		
Chapter XV.—Bread and Substitutes, 139-144			
Chapter XVI.—Meat .....	145-150		
Chapter XVII.—Vegetables .....	151-156		
Chapter XVIII.—Soups .....	157-159		



Publishers' price, \$1.00 postpaid.

The index is carefully prepared so one may find without loss of time any desired information contained in the book. This will be seen below from the extract from the index which also shows the completeness of the work:

Character .....	65
Cheese .....	125
Chest Protector .....	94
Chicken-pox .....	254
Chicory .....	136
Children, Hygienic Care of .....	204
Washing or Bathing .....	204
Chlorate of Potassium .....	263
Chlorine .....	257, 263
Choking .....	232
Cholera .....	264, 265, 266
" Belt .....	95
Cisterns .....	133
Cleanliness .....	283
Cleansing Cream .....	110
Clothes .....	247, 256
Horses .....	104

Lines .....	104
Clothing .....	67
Care of .....	109
Cotton .....	90
Disinfection of .....	247
On Fire .....	233
Renovating .....	110
Rubber .....	89
The Warmest .....	89
Woolen .....	91
Coal .....	84
Oil .....	83
Coddish Cutlets .....	148
How to Cook .....	147
Coffee .....	135
Substitutes .....	136
Coin .....	276

If Swallowed .....	234
Comforts, Little .....	13
Confinement .....	185
Constitution .....	249
Constitution—How to Have a Good, 178	
Consumption .....	269-275
Contagion .....	244
Conversation .....	61
Cookery—Importance of .....	38
Instruction in .....	37
Cooking Utensils .....	112
Corn .....	129
Hulled—Old-fashioned .....	142
Parched—Meal .....	141
Pudding .....	143
Corned Beef .....	146
Mutton .....	146

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THE A. I. ROOT COMPANY, MEDINA, OHIO

# GLEANINGS IN BEE CULTURE

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Editor Home Department

H. H. ROOT  
Asst's Editor

Department Editors:—DR. C. C. MILLER, J. A. GREEN, PROF. A. J. COOK, J. E. CRANE, "STENOG," LOUIS H. SCHOLL,  
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## CONTENTS OF JANUARY 15, 1909

EDITORIAL.....	47	Mouth of Bee.....	57
Honey, Liquefying.....	47	Syrup Fed in Winter.....	59
Spacing Combs for Winter.....	47	Honey, Fancy, from Box Hives.....	60
Alfalfa, Bulletin on.....	47	Honey, Comb vs. Extracted.....	61
Drouth of 1908.....	47	Bees Moved Short Distances.....	63
Bee-keepers' Review.....	47	HEADS OF GRAIN.....	64
Weber, Death of.....	48	Overstocking in a Buckwheat Country.....	64
Bees, Shaking to Stimulate.....	48	Queen in Wrong Hive.....	64
Doolittle's Book.....	49	Colonies Grouped Close for Winter.....	65
Alexander's Writings Reprinted.....	49	Honey, Profits on.....	65
STRAY STRAWS.....	50	Tariff on Honey Not Favored.....	65
Sugar, Cane and Beet.....	50	Chicago Bee-keepers' Meeting.....	66
CONVERSATIONS WITH DOOLITTLE.....	51	Humming in Cellar, Cause of.....	66
SIFTINGS.....	52	Sealed Covers v. Cushions.....	66
Cans, Old, Selling.....	52	Clover, Alsike and Red Not Hurt by Drouth.....	66
BEE-KEEPING IN THE SOUTHWEST.....	53	Drouth, Summer v. Fall.....	67
GLEANINGS FROM OUR EXCHANGES.....	54	San Francisco Quotations.....	67
Shafal, a New Clover.....	54	OUR HOMES.....	68
Sunflowers.....	54	Celery in Florida.....	69
Reclamation Service Attacked.....	54	POULTRY DEPARTMENT.....	69
Hasterlik's Book on Honey.....	54	Gate for Chickens.....	70
Bees on Fruit.....	55	Basswoods Planted in Fall.....	70

### FIRST LESSONS IN DAIRYING.

Milk production is one of the great and rapidly growing industries of America, and naturally it calls for a literature of its own. Some remarkably scientific works on the subject have been prepared of late years, and of practical books many have been written and published. But there was a pressing need for a plain simple work suitable for the average farmer who does not understand much about milk, but who wishes to learn some of the fundamental principles. It was for just such a class that Prof. H. E. Van Norman's book, "First Lessons in Dairying," was written. The information given is couched in plain simple language easily understood by the average farmer. It is not a large volume, but it is quite extensive enough to give a lot of valuable information on the subject, which all producers of milk should possess. It explains the secretion of milk by the cow, and gives the latest knowledge of the chemistry of milk. "Creaming," a process not usually understood by dairymen, is satisfactorily explained, and this is appropriately followed by a chapter on cream-ripening, in which the philosophy of the fermentation of milk is clearly explained. Churning is fully dealt with, nothing of real importance to a practical man being omitted. Some clear-cut ideas on the marketing of dairy products are presented, and these alone are worth the price of the book. There is a chapter on equipment that is common sense and to the point. The Babcock test is explained, and the details of butter-judging are given very accurately and clearly. There is a short chapter on the history of modern dairying in America, and, lastly, a summary of the various causes which lead to bad results in handling milk and butter. In short, this book is a sort of guidepost to dairy work which may be readily carried in one's inside pocket while at work on the dairy farm. It would be a good thing if many dairymen would commit this book to memory. As a result we should get better milk.

### A SUCCESSFUL SEED-HOUSE.

For some years the famous Iowa seed-house of Ratekin has been utilizing a space in these pages each spring, and evidently to the entire satisfaction of many readers who have sent orders there. A great specialty of this house is fine seed corn. Around the home of the business, Ratekin has educated the farmers to grow strains of corn solely for his farmer trade, until this section has become famous far and wide for its splendid seed corn. For a quarter of a century he has been doing this

until a business has been built up in which farmers have great faith. We presume the other seeds sold by this house are raised with equal care. Send for the Ratekin seed catalog before you forget it.

### FINE STATIONERY PAPER.

Quite possibly you have never given any thought to the quality of the stationery used by you in correspondence. Like many others you may have left that matter entirely with your printer, who, in turn, charged you a price that would allow him to furnish the best paper; but, unfortunately, he chose to supply you with a second-rate quality. This is a common practice. There is only one way to circumvent this, and that is to find out for yourself what fine paper really is, and be your own judge. As a preliminary step we would suggest that you write to the makers of the "Hampshire Bond" papers which are advertised on another page. They will send, on request, samples of their high-grade papers which will probably convince any skeptic that it is worth while to order the very best paper obtainable. While the price of these high-grade papers may be a little more, the quality is so much better that one does not hesitate to pay the difference, and your local printer will probably charge enough to pay for the best, any way. In any event, we are inclined to believe that, when you have carefully examined the "Hampshire Bond" papers, you will instruct your stationer to furnish you no other. The best is none too good, even for a bee-keeper with a small trade. It is worth while to write to the paper company just to see the difference between good and bad paper, and we hope you will do this.

### SHUMWAY'S SEEDS.

Again we have with us for another campaign the well-known seedsman R. H. Shumway. His name has a familiar sound to many of those who purchase seeds, as he is one of the leaders in the seed trade. He sends his seeds far and wide over this continent, but the Mississippi Valley more particularly, as his seeds are of a hardy kind, and suitable to both extremes of temperature. It is needless to say that Mr. Shumway issues a fine catalog, which will be mailed free to all applicants. He is always to the front with desirable novelties which are likely to hold the interest of all garden-makers. He has also a very complete line of farmers' seeds which have been found worthy of extensive culture in the temperate zone.



## Seasonable Supplies

This is the season to buy your bee-hives. The discount pays your freight expense, and you can get them ready for the bees during the quiet winter months. We have the

### Root Dovetailed Hive Danzenbaker Hive Root Chaff Hive

Each the best of its kind, and all "Root Quality." Our central location gives you the best of service with low freight charges. We want to quote you prices on the hives you will need.

*Send for catalog.  
Beeswax wanted.*

**M. H. Hunt & Son, Lansing, Mich.**  
Opposite Lake Shore Depot.

## Bee Supplies

**for the Southern  
States.**

WE are better prepared than ever before to take prompt care of all orders. We sell goods at factory prices and aim to keep our stocks well assorted. Write us for estimates on your list, or send the order right along and we will guarantee that you will be satisfied. We handle none but the best goods. Golden bees and queens a specialty. Send in your orders now and be sure of early delivery.

### HOWKINS & RUSH

241 Bull St. SAVANNAH, GA.

## Field and Garden Seeds Bee and Poultry Supplies

The best quality bee-supplies. None better to be had. Now is the time to send in orders, and be ready for the rush season.

All kinds of Garden and Field Seeds. Choice sweet-clover seed always in stock. A large variety of best seeds for the South.

Bee-keepers and gardeners who also raise poultry will be interested in our large stock of poultry-supplies, the largest and most complete line in the South. . . . .

Catalogs of all of the above lines on request. Send now, and get your orders in early. .



**Texas Seed and Floral Company**  
Dallas, Texas

## Listen!

We wish to announce that we have purchased The A. I. Root Co.'s supply business for Western Pennsylvania from Mr. John N. Prothero, of DuBois, Pa., and are ready to fill orders promptly with a full line of supplies.

### Root's Goods

always give satisfaction. Four-per-cent discount in January, and three-per-cent discount in February on cash orders, from catalog prices.

Geo. H. Rea has turned his entire bee business over to us. We can supply you with the very best Italian bees and queens. Orders booked now for spring delivery about May 1. Every queen purely mated, each, \$1.00; dozen, \$11.00.

Two-frame nucleus and queen, \$2.00; very strong colony, \$10.00.

Three-frame nucleus and queen, \$3.50; medium colony, \$8.00.

Four-frame nucleus and queen, \$5.00; good hybrids, \$5.00. Bees in 8 or 10 frame hives; good queen in each.

We can supply you with any thing in the

### Bee Line.

**REA BEE & HONEY CO.,**

Reynoldsville, . . . . . Pennsylvania.



# INDEX TO ADVERTISEMENTS.

## Agricultural Imple'ts.

Allen, S. L., & Co. .... 19  
Ames Plow Co. .... 19  
Bateman Mfg. Co. .... 19

## Ap'lary for Sale.

Hale, J. T. .... 29

## Savings by Mail.

Savings Deposit Bank. .... 25

## Bee-supplies.

Blanke & Hauk ..... 10  
Hilton, George E. .... 11  
Howkins & Rush. .... 7  
Hunt & Son, M. H. .... 7  
Jenkins, J. M. .... 3  
Jepson, H. H. .... 13  
Leahy Mfg. Co. .... 26  
Minnesota Bee Supply Co. .... 10  
Muth, Fred W. .... 2  
Nebel, J. & Son. .... 13  
Nysewander, Joseph. .... 13  
Peirce, E. W. .... 15  
Pilcher & Palmer. .... 15  
Pouder, Walter S. .... 16  
Rawlings Implement Co. .... 13  
Rea Bee and Honey Co. .... 7  
Root Co., Syracuse. .... 13  
Schwill, Otto & Co. .... 13  
Soper, W. D. .... 29  
Stringham, I. J. .... 2  
Texas Seed and Flo. Co. .... 7  
Toepperwein & Mayfield. .... 12  
Weber, C. H. W. .... 10  
Woodman, A. G. .... 15

## Bee-smokers.

Danzanbaker, F. .... 11

## Bone-cutters.

Mann Co., F. W. .... 20  
Humphrey. .... 20

## Books.

Dadant & Sons. .... 29  
System Co. .... 25

## Buggies, etc.

Ohio Buggy Co. .... 24  
Elkhart Carriage Co. .... 21

## Classified Advertiser's.

Bees and Queens. .... 28  
Bee-keepers' Directory. .... 29  
For Sale. .... 29  
Help Wanted. .... 29  
Honey and Wax Wanted. .... 28  
Honey and Wax for Sale. .... 28  
Post Cards. .... 28  
Poultry. .... 28  
Real Estate for Bee-keepers. .... 28  
Situations Wanted. .... 29  
Wants and Exchanges. .... 28

## Comb Foundation.

Dadant & Sons. .... 29

## Fencing.

Am. Steel and Wire Co. .... 17  
Anchor Fence and Mfg. Co. .... 18  
Anthony Fence Co. .... 18  
Coiled Spring Wire. .... 18  
Kitselman Brothers. .... 18  
Mason Fence Co. .... 18

## Fruit Products.

Cal. Fruit Products Co., cover. .... 7

## Furs.

Funsten Brothers. .... 26

Nat'l Fur and Tanning Co. .... 18

## Honey-dealers.

Fred. W. Muth Co. .... 2  
Hildreth & Segelken. .... 3  
Israel, Chas. & Bros. .... 2  
National Biscuit Co. .... 3  
Stringham I. J. .... 2

## Household Specialties.

Best Light Company. .... 19

## Incubators.

Cyphers Inc. Co. .... 20  
Des Moines Incubator Co. .... 20  
Johnson, M. M. .... 21  
Miller Co., J. W. .... 20  
Reliable Incubator Co. .... 20  
Root Incubator Co. .... 27  
Stahl, George H. .... 20  
United Factories. .... 20  
Wisconsin Incubator Co. .... 20

## Land for Sale.

Burlington Railway. .... 25  
Love, R. M. .... 28  
Seaboard Air Line. .... 21

## Miscellaneous.

Mugler Engraving Co. .... 26

## Music Schools.

Simplex School of Music. .... 25

## Nurserymen.

Farmer, L. J. .... 23  
Gardner Nursery Co. .... 23  
German Nurseries. .... 23  
Green's Nursery Co. .... 22  
Hubbard, T. S. .... 23  
Kellogg Company. .... 22  
Roesch, Louis. .... 22  
Scarff, E. W. N. .... 22  
Sheerin's Nurseries. .... 22  
Storrs & Harrison Co. .... 23

## Paper.

Hampshire Paper Co., cover. .... 7

## Patents.

Williamson, C. J. .... 19

## Poultry-supplies.

Berry's Poultry Farm. .... 20

Greider, B. H. .... 20  
Larkin & Hersberg. .... 20  
Neubert, R. F. .... 20

## Publications.

American Bee Journal. .... 10  
Bee-keepers' Review. .... 5  
Farm and Stock. .... 11  
Farmer's Call. .... 26  
Fruit Grower. .... 11  
Guide to Nature, cover. .... 11  
Successful Farming. .... 11

## Railroads.

Seaboard Air Line. .... 21

## Seedsmen.

Berry Seed Co., A. A. .... 22  
Burpee, W. Atlee. .... 21  
Olds Seed Co., L. L. .... 23  
Rakekin's Seedhouse. .... 20  
Shumway, R. H. .... 22  
Storrs & Harrison. .... 23  
Wallin, W. B. .... 23

## Sprayers and Pumps.

Deming Co. .... 19  
Rochester Spray-pump Co. .... 19

## Stoves and Ranges.

Kalamazoo Stove Co. .... 24

## Telephones.

Stromberg-Carlson. .... 24

## Tools.

Iwan Brothers. .... 19  
Myers, C. A., Co. .... 26

## Wagons.

Electric Wheel Co. .... 26  
Empire Company. .... 19

## GRAPEVINES FOR ALL.

We know that nearly all bee-keepers are interested in fruit, and not a few are experts in fruit culture. They will, therefore, read with considerable interest the advertisement of The T. S. Hubbard Co., who now make a special offer of ten good two-year-old grapevines for \$1.00. Grapes are very useful in the dietary of many a family in America, and at the price for vines we have just mentioned they might become important to all who live outside our very largest cities. There is now hardly any excuse for a family being without a good supply of grapes every fall, when it is so easy to get a supply of vines. The selection offered is of the very best, and only prolific bearers of good fruit are included. Anybody can plant a grapevine and have it grow. Try it and be convinced.

## OLD TRUSTY.

The name of Mr. M. M. Johnson is one to conjure with in the incubator-manufacturing world. He is the maker of the celebrated "Old Trusty" line of incubators, and they are true to name. Mr. Johnson is famous for the admirable way he treats all his customers. He makes his hatching-machines of California redwood, famous for its fire-resistant qualities; but as a further precaution he has recently decided to cover all his "Old Trusties" with sheetiron, rendering them practically fireproof. In spite of these extras he sells his machines cheap.

## A NOVEL INCUBATOR.

We publish in our advertising columns (page 27) an illustration of a novel kind of incubator. It is quite a departure from those now in general use, which all employ hot air to heat the eggs. The Root incubator is a wide variation from this, in that the eggs are heated by direct contact with a hot surface, just as a hen warms the eggs under her. It looks to us as if this would be quite an improvement on the present method. It is also reasonable to suppose that the new incubator will be easier to manage and control than the ones now in use, seeing it copies very closely after nature's plan. Doubtless there will be a large demand for the Root incubator just as soon as the poultrymen generally get to know of it. Until now only a few have seen it. The average breeder is fond of experimentation, and here is his opportunity to exercise that

talent, with probably good results. It would be well to write for further particulars at once.

## KIND WORDS.

*My dear Mr. Root:*—Away back in the 80's I used to read GLEANINGS, when I was a boy of 13 or 14. I had about 20 colonies then, and was as devoted a student of the "poetry of agriculture" as ever walked. I had my best queens from the old "A. I. Root Co." (it was not a "Co." then), and was interested in bees, and had them up to the time I went away to college. I was the first in our community to secure a hundred pounds of honey from a single colony from clover in one year. That is not much now; but for a boy, and in that community, it was thought so. It was in Mendon, Ill., that I lived then, near Quincy.

When I went away to college I tried to keep up the apiary in the intervals of vacation, but it would not work. They gradually winter-killed, and I had to give it up for a time. After my college course of four years, and three of graduate work, in special study at Yale University, I came south to this university to take the chair of Latin, where I have been ever since. It was not long before I had a home and a dear little wife, and not long, either, after that, that she gave me my renewed start in bees by a present of a Corniel smoker and two Italian queens. I got three colonies of blacks in box hives, and have increased to over thirty here, and as many more in my summer home in Treviso, Pa., just about ten miles beyond Jenkintown. I have a \$10.00 breeding queen, and am under contract to rear early queens for a large breeder in the North. I succeeded in procuring the orange honey that my good friends Mr. Selser and Mr. Young, of Washington, declared to be the purest sample of orange honey they had ever received. I can not keep up with the demand for it. It goes "like hot cakes," both locally and in Philadelphia, where I have sold the most of it.

Nothing, I assure you, would give me greater pleasure and solid satisfaction than to do two things—show to you the buildings and work of Stetson University, and, best of all, to show A. I. Root to the university and university town! I have omitted the greatest pleasure of all—the chance to meet and know you personally.

Deland, Florida, Dec. 29, 1908.

Cordially your friend,  
EDWIN G. BALDWIN.



# THE REASON WHY GLEANINGS IN BEE CULTURE is Valuable FOR GENERAL ADVERTISERS.

Our last argument presented the broad claim that GLEANINGS IN BEE CULTURE is valuable for general advertisers, and stated that we were prepared to prove it by reports from subscribers from the Atlantic to the Pacific.

## EVIDENCE.

GLEANINGS has never, to my knowledge, fallen down on a single advertising proposition we have put in that paper. D. L. TAYLOR, Pres. Long-Critchfield Corp.

In the twenty papers in which our advertising appeared last winter, there were only two which made a better showing. NATIONAL FUR AND TANNING CO.

We received from GLEANINGS twice as many replies as from any other paper used except one.

SUBURBAN LIFE.

Considering the cost of space in your publication, GLEANINGS is the best producer we have on our list. STROMBERG-CARLSON TELEPHONE MFG. CO.

The above reports show what advertisers think of GLEANINGS

The following reports from our subscribers from different States show how much they value GLEANINGS, and these reports indicate the reason why advertisers get such good returns, for, as a leading advertising agency said: "The secret of such remarkable returns secured by many advertisers in GLEANINGS is due, in my judgment, to that *esprit de corps* which exists between Mr. Root and your subscribers."

Allow me to express my appreciation of GLEANINGS, as a novice in apiculture. It has been most interesting and instructive. F. C. TEMPLETON, New Jersey.

GLEANINGS is a paper that every bee-keeper ought to take. F. GOODNOW, Wisconsin.

I do not want to miss a single number, for one number sometimes contains information worth more than the subscription price. JOHN STOTTS, Iowa.

I expect to take GLEANINGS as long as I live. Even if I were to quit keeping bees I should still want it. H. C. CLEMONS, Kentucky.

I can not overestimate the value of your paper, as one article alone saved me forty times the price of subscription. D. DONALDSON, Ontario.

I consider each copy of GLEANINGS worth a year's subscription. T. J. QUAIL, Nebraska.

There's no use trying to get along without GLEANINGS; so, send it along. E. R. BURLEY, Michigan.

GLEANINGS is O. K., and I wouldn't be without it. ROBERT E. HOHNKE, Colorado.

I read every portion of GLEANINGS, and would rather go without my dinner than miss it.

C. A. JACOBSON, New Zealand.

Beginning with January, 1873, I have been a subscriber and constant reader of GLEANINGS, and would feel as though I had lost a tried and true friend if I were to give it up. JOHN H. UMPLEBY, New York.

We might go on for pages, reproducing long letters from hundreds of enthusiastic subscribers all over the world, but our space will not permit.

## CIRCULATION OF GLEANINGS IN BEE CULTURE BY STATES.

Arizona..... 150	Idaho..... 150	Maryland..... 275	New Mexico..... 150	Texas..... 900
Alabama..... 500	Indian Territory. 75	Michigan..... 1875	Nevada..... 150	Utah..... 225
Arkansas..... 450	Illinois..... 1300	Minnesota..... 975	Ohio..... 2300	Vermont..... 175
California..... 750	Indiana..... 1600	Montana..... 225	Oklahoma..... 275	Virginia..... 400
Colorado..... 325	Iowa..... 1400	Mississippi..... 475	Oregon..... 300	Wisconsin..... 975
Connecticut..... 275	Kansas..... 550	New York..... 2200	Pennsylvania..... 2200	West Virginia..... 675
Delaware..... 200	Kentucky..... 575	New Hampshire..... 225	Rhode Island..... 200	Wyoming..... 75
District of Columbia..... 40	Louisiana..... 270	North Carolina..... 450	South Carolina..... 350	Mexico..... 125
Florida..... 325	Maine..... 275	New Jersey..... 200	South Dakota..... 175	Canada..... 500
Georgia..... 475	Massachusetts..... 250	North Dakota..... 100	Tennessee..... 650	Foreign..... 800

By the above table a fair idea will be obtained of the strength of GLEANINGS family in this country; and from reports we have recently received, large purchases have been made in hundreds of instances of goods advertised in our columns. Orders aggregating several hundred dollars are often sent at a single time; for bee-keepers, being obliged to order their bee-supplies by mail, form the habit of calling for advertised goods; and if not on sale at their local stores, they will order them direct from the advertiser. Perhaps this reason alone, the necessity of ordering their bee-supplies by mail, has made our readers better buyers of advertised goods than the subscribers of any other paper.

Another reason why our subscribers are good buyers is because of the confidence they have in our advertisers. It is very rare indeed to get a complaint from a subscriber of any unfair dealing on the part of one of our advertisers, and, having such great confidence in our advertisers, our readers patronize them liberally.

For any particulars address

**ADVERTISING DEPT., GLEANINGS IN BEE CULTURE,  
MEDINA, OHIO.**

"The Little Magazine With a Big Field."



# LOCATION, STOCK, PRICE

We are more centrally located, have the advantage of being able to ship direct over THIRTY different RAILROADS and STEAMBOATS, and as we always carry several carloads of

## ROOT'S SUPERIOR BEE-SUPPLIES

in stock, we are, therefore, in position to furnish the best bee-goods at the very lowest prices. *This month* we can quote a SPECIAL CASH PRICE, if you will send us a list of your requirements, either for immediate or future delivery.

### BEESWAX

We will buy all you can ship us, at market prices for cash or in trade. Write us to-day.

If interested in poultry, write for catalog No. 8.

**BLANKE & HAUKE SUPPLY CO.**  
1009-11-13 Lucas Ave. ST. LOUIS, MO.

## BEE-SUPPLIES FOR SEASON OF 1909

Complete stock on hand, as our plant has been running steadily so as to take care of the demand for **bee-supplies** the early part of the coming season. We are practically overstocked at this time and advise those in need of **bee-supplies** to order now (shipments may be delayed until you want the goods) before the contemplated advance in prices all along the line. Lumber is dearer and labor has never been so high, but we agree to protect our patrons at present prices upon receipt of their orders at this time.

Being manufacturers we buy lumber to advantage, have lowest freight rates, and sell on manufacturers' profit basis. Let us quote you prices. Prompt shipment guaranteed.

**MINNESOTA BEE SUPPLY CO.,** 123 Nicollet Island, Minneapolis, Minn.

## This Coupon Worth 35 cents

(New Subscribers Only)

Name .....

Postoffice .....

State .....

If not now a subscriber and you want one of the most helpful aids to successful bee-culture—a paper that tells how to make your bees pay—you should subscribe for the

### AMERICAN BEE JOURNAL

A 32-page illustrated 75-cent monthly. It tells all about the best way to manage bees to produce the most honey; with market quotations, etc. A dozen different departments—one for women bee-keepers. Best writers.

### It Will Increase Your Honey-Money

If you will send us your name and address with 40 cents (stamps or coin) together with this coupon, we will send you a trial trip of our Journal for 12 months. Order now and let us begin with this month's fine number. Address,

**American Bee Journal, 118 West Jackson, Chicago, Illinois**



## HILTON'S Strain of Bees and What They Did

Dear Friend Hilton:—The two three-frame nuclei I received of you May 21 were received in fine condition, and the red-clover queens proved themselves worthy of the name. I never saw finer or gentler bees. They were transferred to ten-frame hives and full sheets of foundation. I now have four strong colonies, with plenty of stores for winter, and have taken 195 lbs. of fine extracted honey, mostly clover. I want two more nuclei for next spring delivery, and my neighbor wants another. You may use this letter or any part of it as you choose.

Gratefully yours,

Rhineland, Wis., Sept. 14, 1908. G. C. CHASE.

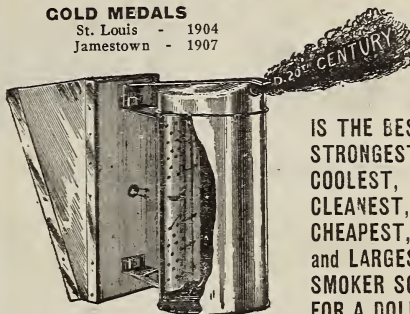
In addition to the above I have sold friend Chase about \$200 worth of ROOT GOODS, which deserve some credit for the above results—the best of every thing is none too good. ROOT'S GOODS and GLEANINGS helped. If you are not taking GLEANINGS, WHY NOT? For an order of \$10.00 before Jan. 1 I will give GLEANINGS one year; \$20.00, two years; \$30.00, three years; or you may have GLEANINGS from now to the end of 1909 for \$1.00; two years for \$1.50; three years for \$2.00. SEND FOR MY 40-PAGE CATALOG. CASH FOR BEESWAX, or will exchange goods for it.

**GEO. E. HILTON**  
FREMONT, MICH.

## IMPROVED DAN-ZE GUARANTEED 'ALL RIGHT'

**COLD MEDALS**

St. Louis - 1904  
Jamestown - 1907



IS THE BEST,  
STRONGEST,  
COOLEST,  
CLEANEST,  
CHEAPEST,  
and LARGEST  
SMOKER SOLD  
FOR A DOLLAR.

With the side grate combines hot and cold blast deflecting part of the air back and over the fuel; COOLS as it expels the smoke, while part fans the side and bottom till all consumed. The Double-walled case, 3½ inches in diameter, has asbestos-lined sides and bottom, keeping all cool.

The projecting hinge-strap protects the smoke exit, and renders easy opening the one-piece cap.

THE VALVELESS metal-bound bellows combines simplicity, utility, and durability.

Five years increasing sales justify us in extending our GUARANTEE of PERSONAL RESPONSIBILITY for full satisfaction or REFUND of price on all our smokers sold by US or OTHERS.

Price, \$1.00; two, \$1.60; mail 25c each extra.

DAN-ZE HIVES with metal Propolis-proof Guards.

ROOT'S Goods at Root's prices, early-order discounts. Write us for anything you need. Free circulars for yourself and your friends.

If you want a home in this genial Sunny South Land, we will help you find it.

F. Danzenbaker, Norfolk, Va., or Medina, Ohio



## Post Cards Free

Here are 12 as handsome Post Cards as you have ever seen. The flower cards are all embossed—raised flowers. There are six of these. The other six are scenes like the one above—large beautiful and grand—nothing cheap or small about any of them. These twelve cards will be sent to anyone FREE. Just send a dime—stamps or coin—for a three months' trial subscription to Farm and Stock or The Fruit-Grower. These papers will delight you. They are the best on following subjects: Fruit Growing, Corn Growing, Stock Raising, Farm Veterinary, Farm Women, Dairying, Poultry Raising and Bees, etc. Write at once, and address the paper you want.

FRUIT-GROWER, FARM AND STOCK,  
St. Joseph, Mo. St. Joseph, Mo.  
Box 440 Box 440

## 10 Packages

Choice Varieties

FLOWER SEEDS

## FREE!

Write Quick!

Just think—we will give you free not one, but all ten packages of these favorite flowers free.

- 1 pkg. Asters, finest, mixed
- 1 pkg. Pansy, Royal Show
- 1 pkg. Pinks, finest mixed
- 1 pkg. Poppy, double, mixed
- 1 pkg. Heliotrope Giant, mixed
- 1 pkg. Petunia Giant, mixed
- 1 pkg. Phlox, large, flowering
- 1 pkg. Callispsis, all colors, mixed
- 1 pkg. Verbenas, mammoth, mixed
- 1 pkg. Alyssum, sweet, fragrant



THE WORLD'S  
MOST POPULAR  
FLOWERS

**OUR OFFER:** Send only 25 cents for a full year's subscription to Successful Farming, the great farm magazine, and we will send you at once these ten packages of Flower Seeds, absolutely free and postpaid.

This is positively the most liberal offer ever made by any newspaper. We are publishing one of the best farm papers in America and we want you to know it. We know if you will read Successful Farming for one year you will want it always. This is why we are making you such a liberal offer. Thousands will take advantage of this big offer. We may not have enough seeds to fill all the orders, so send quick, right now, and we will send the seeds and tell you how you can get five beautiful rose bushes free.

SUCCESSFUL FARMING, Dept. 417, Des Moines, Iowa.

# New Goods for 1909



## Good News for the Southwestern Bee-keeper

The strenuous season of 1908 left our stock of bee-supplies in a depleted condition. We have now replenished our stock with large shipments of the finest bee-goods ever seen in the Southwest. These are

### Root's Goods Exclusively

We have not dared to experiment with any other line of bee-supplies; and from the looks of our new goods we shall never need to. They are "as fine as silk." We should be glad if our customers would come and see them. You will be pleased with the best ever. Come along and enjoy a day in San Antonio, picking out what you want while your wife goes shopping. Seeing is believing, and we would far rather hear you puff our goods than do it ourselves. But we honestly believe we have not only the largest line of bee-supplies in Texas, but also, by far, the best in quality.

### Shipping-cases for Comb Honey.

500	12	4	3 and 2 in. glass.	350	6¼	3	2 and 3 in. glass.
350	10	4	2-in. "	550	7½	4	3-in. "
200	12	2	2-in. "	250	7½	3	3-in. "
200	16	2	2-in. "	300	9¼	4	3 in. "
250	8	3	2-in. "	50	9¼	3	3-in. "

If you can use any of the cases in the foregoing list we will quote very attractive prices to clean them up. Please write at once if you want any.

Early-order discount—3 per cent for January; 2 per cent for February.

### Catalogs Free on Demand

Do not fail to notice we are now using a brand-new set of Weed foundation machinery, with which we are turning out the highest grade of foundation. We use clear Southern beeswax, of which we have a large stock on hand. If you have wax of your own we will work it up into foundation at very reasonable rates. We do a large business trading bee-supplies for wax.

We want a live agent in every county in Texas.

**Toepperwein & Mayfield**  
1322 South Flores St.  
San Antonio, Texas



## A GOOD INVESTMENT.

You can make no better investment than to take the discounts I am offering on bee-keepers' supplies. These discounts will diminish as the season advances; so the earlier you send in your order the better the investment. You can not afford to miss this special offer. Send in the list of the goods you want and get my net prices by letter.

My stock of Root goods is the largest and most complete carried in the West, and with carloads continually being added I am in position to meet every want of the bee-keeper, with promptness and satisfaction.

Write to-day for new prices and catalog.

**JOS. NYSEWANDER,**  
565-7 W. 7th St. Des Moines, Iowa

## NEW STOCK

We have a stock of goods now on hand for next season, and would like very much to receive your orders for supplies. We take pleasure in shipping orders and try our best to please every one.

Each order has our very best attention. Can you not make out an order and send to us? Over \$15,000 worth of supplies are now here awaiting your needs.

At this time of the year we would be especially pleased to hear from you. During January we allow three per cent discount.

**THE A. I. ROOT CO.**  
SYRACUSE .. .. NEW YORK

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We have a full line of

### LEWIS BEEWARE

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AT FACTORY PRICES.

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ESTABLISHED 1884

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MOST PROMPTLY from

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### PORTRAITS.

- 14 N. E. France.
- 16 C. H. W. Weber.
- 30½ L. L. Langstroth in Root apiary.
- 31½ L. L. Langstroth monument.

### APIARIES.

- 57 Hansen's Sweetwater apiary.
- 71 Root's New York apiary.
- 72 Root's Jenkintown apiary.
- 73 Detroit city bee-yard.
- 74 Hanselman's Wisconsin apiary.
- 75 Winter view of an apiary.
- 76 A view of Alexander's Apiary.

### HONEY-PLANTS.

- 101 Clover-blossoms, red, white, alsike.
- 114 Buckwheat.
- 118 Basswood.

### BEEES AND BEE ANATOMY.

- 150 Sting of bee.
- 154 Upper view of worker.
- 166 Bee-moth.
- 168 Queen, drone, and worker.
- 169 Queen and retinue
- 170 Sectional view of bee's tongue.
- 171 Drone.
- 171a Queen.
- 172 Breathing apparatus of drone.
- 172a of queen.
- 173 Digestive organs of drone.
- 173a queen.
- 174 Reproductive organs of drone.
- 174a queen.
- 175 Nervous system of drone.
- 175a queen.
- 176 Relative sizes of parts of drone.
- 176a queen.

### BEE-IMPLEMENTS.

- 200 Bingham smoker.
- 202 Clipping queen with knife.
- 203 Corneil smoker showing parts.
- 204 Cowan extractor No. 15.
- 205 Cowan extractor showing parts.
- 207 Hoffman frame.
- 208 Benton queen-mailing cage.
- 209 Bee-veil No. 2.
- 210 Queen-clipping device.
- 210½ Clipping queen with scissors.
- 212 Holmes bee-hat.
- 213 Danzenbaker frame.

### 214 Honey-board No. 9.

- 216 Porter bee-escape show'g parts.
- 217 Clark smoker.
- 218 Corneil smoker, three sizes.
- 219 Sample perforated zinc.
- 220 Entrance-guard, Alley trap.
- 221 One-frame obs. hive with super.
- 222 Same without super.
- 223 Quinby frame.
- 224 Nucleus shipping-box.
- 225 Bee-gloves.
- 226 Bee-tent.
- 227 Handling Hoffman frames.
- 228 Ten-inch foundation-mill.

### FACTORY VIEWS.

- 270 Root's factory from northwest.

### HIVES.

- 300 Root Dove'd hive, 8 fr., 1-story.
- 302a Root Dove'd hive, CE64P / 8.
- 303 Root Dove'd hive, AE66 / 8.
- 304 Root Dove'd hive, AE64I / 8.
- 305 Root Dove'd super, P / 8.
- 306 Danzenbaker super.

### MANIPULATING HIVES.

- 341 How to avoid killing bees with closed-end frames
- 342 Uncapping honey.
- 353 Handling frames in groups.

### COMB.

- 357 Frame of queen-cells.
- 357½ Frame of queen-cells.
- 358 Specimen of pickled brood.
- 359 Frame of queen-cells building.
- 361 Photograph of foundation.
- 361a Medium brood foundation.
- 361b Thin super foundation.
- 362 Fully built brood-comb.
- 362½ Fully built brood-comb.
- 374 Comb under clapboards of house.
- 375 Natural comb-building in frames.
- 376 Comb-building in open air.
- 377 France with frame of foul brood.
- 378 Comb foundation under eaves of house.
- 379 Edge of honey-comb.
- 380 Partly constructed comb.
- 381 Surplus honey-comb.
- 382 Honey-comb from two sections.
- 383 Soap-bubbles, honey-comb effect.

### ALFALFA.

- 400 Stacking alfalfa.
- 401 Stacks of alfalfa.

### COMIC.

- 420 Ouach, comic, two views.
- 421 He laughs best who laughs last.
- 425 After abs'g swarm, uncolored.
- 426 Effect of one bee-sting near eye.
- 427 Effect of bee-sting on the lip.

### HONEY.

- 450 Honey in Aikin sacks.
- 450½ Candied honey in bags.
- 452 Sections, plain and beeway.
- 453 Cutting candied honey.
- 454 Aiken's sack open for the table.
- 455 Sixty-pound can of honey—can stripped off.
- 456 Two-pound cakes candied honey.
- 457 Slab of honey cut by wire.
- 458 Slab of honey nearly cut by wire.
- 459 Sections of comb honey.
- 460 Cutting out section comb honey.

### UNCLASSIFIED VIEWS.

- 500 Bottling honey.
- 505 Sitting on hive-cover.
- 508 Danzenbaker prize honey.
- 534 Moving bees.
- 535 Carrying bees on bicycle.
- 536 Making straw skeps in England.
- 537 Root's bee-cellar, inside.
- 538 House apiary, inside.
- 539 House apiary, outside.
- 540 Swarm on limb of tree.
- 541 Moving bees in New Zealand.
- 542 Bees in skeps covered with straw hackle.
- 543 Symmetrical swarm on tree.
- 544 Swarm.
- 545 Swarm covering boy's head.
- 546 Scraping bees from hat into hive.
- 547 Small boys studying bees.
- 548 Bee-tree.

### FOREIGN APIARIES.

- 550 Mexican bee-keeping.
- 551 Algerian bee-keeping.
- 552 Peruvian bee-keeping.
- 553 Tasmanian bee-keeping.
- 554 Denmark bee-keeping.
- 556 Apiary in Tunis.

**The A. I. Root Company, Medina, O.**

**"If goods are wanted quick, send to Pouder."**  
**Established 1889**

## THE OUTLOOK

*By the Bee Crank*

Some genius has said that an optimist looks at the doughnut and a pessimist at the hole. Who gets the most out of life? The optimist, to be sure, because we live less in the past or the present than in the unknown future, and that future is bad or good according as we look at it through blue spectacles or touch it up with the sunshine of hope and the bright rainbow tints of optimism.

There was once a man who, after a long and active business career retired to a handsome new home which he had built to occupy during his declining years. He put this inscription over the library mantel:—"I have lived many days, and these days have been full of trouble, but most of it never happened."

Let us make 1909 the best year of our lives. It is up to you and me. Every prospect is encouraging. The clouds that one year ago were gathering thick on the financial horizon have broken and are fast



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Are you ready for the good times sure to come? How about your bee supplies? You should get them now; you know that as well as I do. Then you will have them ready for the opening days of spring. Besides this advantage I give you a special discount of three per cent on all cash orders received during January.

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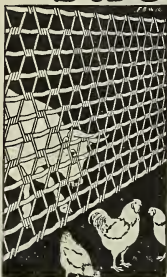
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### AT WHOLESALE PRICES FREIGHT PREPAID

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BOX 101

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Let us show you a small hand sample. Shows you the most compact, smoothest and strongest knot used by any fence manufacturer. Made from tough wire in a strictly mechanical manner. No kink in side, he knot in the line wire. Shows you the heavy top wire. Knot always made from same size wire as line wires. Equal length of line wires guaranteed. Write for sample today. It will be mailed immediately, with booklet, postage prepaid by us.

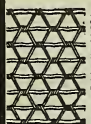


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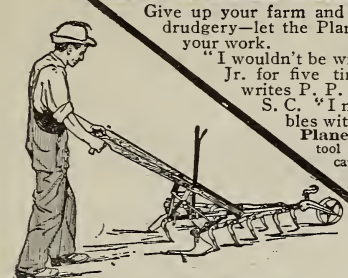

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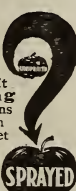
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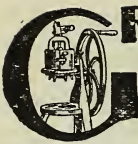
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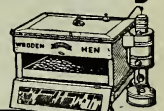
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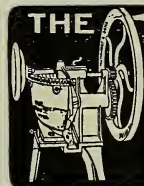
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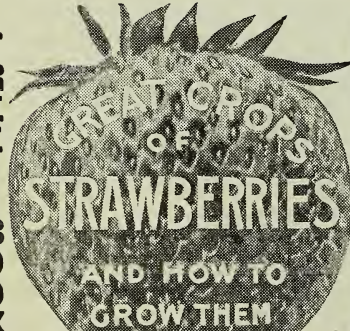
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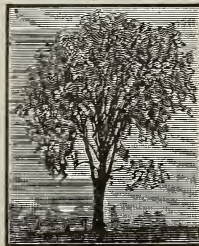
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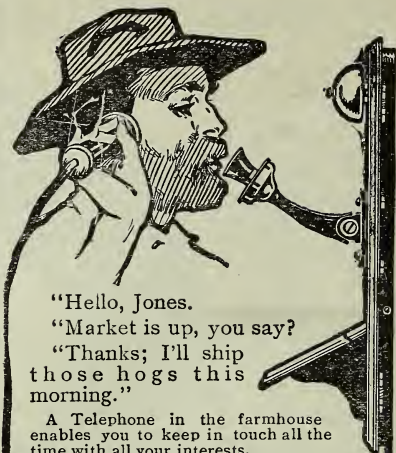
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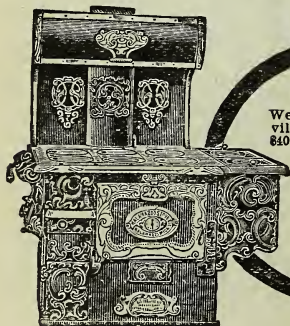
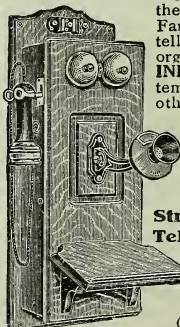
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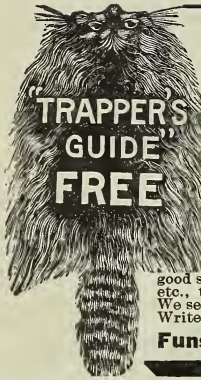
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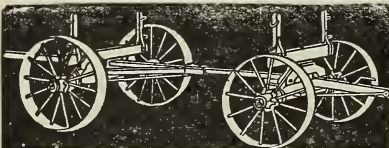


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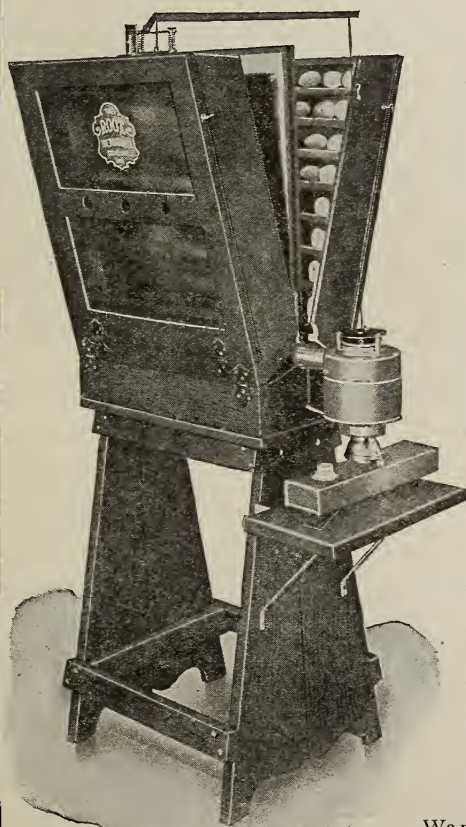
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We will send a copy of this article free to any one sending us his name and address, and mentioning **GLEANINGS**.

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**FOR SALE.**—Buckwheat, amber, No. 2 white comb, \$2.50 per case of 24 sections; unfinished and candied comb, \$2.00 per case; amber extracted ( $\frac{3}{4}$  clover), two sixty-pound cans to case, at 8 cts.  
QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

**FOR SALE.**—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.  
J. P. MOORE, Queen-breeder, Morgan, Ky.

**FOR SALE.**—Clover and amber honey. Table quality. Write for prices, stating your needs.  
C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

**FOR SALE.**—Comb honey, either car lots or less, both alfalfa and sage. Extracted honey, white, in 60-lb. cans. Samples furnished upon application.  
C. C. CLEMONS PRODUCE CO., Kansas City, Mo.

**FOR SALE.**—Honey by the barrel or case—extracted and comb; a bargain in honey. Write now.  
JOHN W. JOHNSON, Box 134, Canton, Mo.

**FOR SALE.**—8000 lbs. fine extracted white-clover honey; also 4000 lbs. light amber, all in 60-lb. cans, at 7 $\frac{1}{2}$  cts. per lb.  
S. E. ANGELL, Harpers Ferry, Iowa.

**FOR SALE.**—Fine extracted white-clover honey; also light amber fall honey, put up in barrels, 60-lb. and 10-lb. cans. Write for prices.  
DADANT & SONS, Hamilton, Illinois.

**FOR SALE.**—Choicest basswood honey in 10-lb. pails.  
F. B. CAVANAGH, Boscobel, Wis.

**FOR SALE.**—Best quality alfalfa in cases of two 60-lb. cans, \$8.40 per case, f. o. b. here.  
H. E. CROWTHER, Parma, Ida.

**FOR SALE.**—2000 lbs. of white-clover honey, 8 $\frac{1}{2}$  cts., in 60-lb. cans. It's fine.  
G. ROUTZAHN, Biglerville, Pa.

### Honey and Wax Wanted

**WANTED.**—Comb, extracted honey, and beeswax. State price, kind, and quantity.  
R. A. BURNETT, 199 South Water Street, Chicago, Ill.

**WANTED.**—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

**WANTED.**—A quantity of white-clover comb honey, averaging light weights, any grade.  
B. WALKER, Clyde, Ills.

## Bees and Queens

**FOR SALE.**—Moore's strain and golden Italian queens, untested, \$1.00; six, \$4.00; twelve, \$7.00. Carniolan, Banat, and Caucasian queens, select, \$1.00; six, \$5.00. Tested, any kind, \$1.25; six, \$6.00. Choice breeding queens, \$3.00 each. Circular free.  
W. H. RAILS, Orange, Cal.

**FOR SALE.**—Italian bees and queens now ready. Untested, \$1.00; tested, \$1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.  
N. V. LONG, Biscoe, N. C.

**FOR SALE.**—1000 colonies of bees with fixtures; run principally for extracted honey. DR. GEO. D. MITCHELL & CO., 340 Fourth Street, Ogden, Utah.

**FOR SALE.**—300 nuclei with good queens for spring deliveries. Place orders now, and know you get them.  
D. J. BLOCHER, Pearl City, Ill.

**FOR SALE.**—Apiaries and queen-rearing business in Southern California. Full particulars on request to  
E. M. GRAVES, Ioamosa, San Bernardino Co., Cal.

## Wants and Exchanges

**WANTED.**—Bees for second-hand hives, thoroughly cleaned by steam; size 16x16; 10 $\frac{1}{2}$  inches deep, ten-frame; suitable for the production of comb or extracted honey. Many of these hives are almost new. Would consider sending a carload to some responsible Texas apiarist in good locality for increase to fill on shares.  
THOS. J. STANLEY, Manzanola, Otero Co., Colorado.

**WANTED.**—Refuse from the wax-extractor, or slumgum. State quantity and price.  
OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

**WANTED.**—To exchange an Anthony 5x8 view camera, with tripod and all supplies, in best of condition, for honey-extractor and uncapping-can in good condition.  
WM. H. ROBINSON, Rt. 7, Lafayette, Ind.

**WANTED.**—400 colonies of bees in California or Texas.  
DR. GEO. D. MITCHELL & CO., 340 Fourth Street, Ogden, Utah.

**WANTED.**—200 stocks or less of bees within 150 miles of Detroit.  
A. W. SMITH, Birmingham, Mich.

## Post Cards.

Post cards at a bargain; 30 assorted, 25 cents.  
W. T. MANNING, Madison, Wis.

## Real Estate for Bee-keepers

PECOS VALLEY of New Mexico lands are being \$50 to \$65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey for the bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homesekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. LOVE, General Agent, Artesia, N. M.

## Poultry Offers

**FOR SALE.**—Colored Muscovy ducks, \$2.50 per pair, or \$3 00 per trio; nice ducks and good layers. Blue geese at \$2.50 a pair. Cash with each order. M. C. MAY, Forest Depot, Va., Rt. 1.

Beechford Farm offers beautiful pairs of Columbian and Part-ridge Wyandottes. Young stock—\$3.00 and \$5.00.  
W. ROBINSON, Beechford, N. Y.

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.  
STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.



## For Sale

**FOR SALE.**—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Mellilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.

W. P. SMITH, Penn, Miss.

**FOR SALE.**—Three 12-inch foundation-mills; make worker, drone, and flat-bottom for supers; all in good order, carefully boxed at \$15.00 each. Dipping-plates and instructions free.

Particulars by letter.

NELLIS, Paterson, N. J.

Great bargains in trees, shrubs, and plants. Send a postal for free catalog. WEST SIDE NURSERY AND FRUIT FARM,

Postville, Iowa.

**FOR SALE.**—Sweet-clover seed, 15 cts. per pound, postage extra. Roots's supplies. ANTON G. ANDERSON, Holden, Mo.

**FOR SALE.**—Danzenbaker comb-honey hives and other bee-supplies. Write for prices. ROBT. INGRAM, Sycamore, Pa.

**FOR SALE.**—Bee-supplies at factory prices.

D. COOLEY, Kendall, Mich.

**FOR SALE.**—Remington type-writer No. 7, good as new. For particulars address Box A, Gleanings in Bee Culture, Medina, O.

## Help Wanted

**WANTED.**—A thoroughly practical bee-man of ability who has also had experience with poultry and fruit. Give full particulars in first letter as to age, whether married or single, experience in farming, poultry, bees, and fruit; also salary wanted. Give references, and say at what date services could begin.

BLALOCK FRUIT CO., Tenth St., Walla Walla, Wash.

**WANTED.**—Single man to take charge of 500 colonies of bees—one who understands running for comb honey and working outyards. Employment the year round. Services required with other duties when not busy with bees. State wages expected, board furnished. W. P. SMITH, Penn, Lowndes Co., Miss.

**WANTED.**—An experienced bee-man, 25 to 40 years of age, to work by the year with bees on the farm; no farm work to do during the bee season; must be an able-bodied man, and one who does not use liquor. State salary expected.

W. S. AUSTIN, Wileyville, N. Y.

**WANTED.**—A helper in a garden who wants to learn bee-keeping, and speaks and reads correctly either German or French.

W. J. SMITH, Webb City, Mo. Rt. 1.

## Situation Wanted.

**WANTED.**—Situation. I have put in 14 straight years of up-to-date bee culture; am able to take charge of large interests; am 36 years old, strictly temperate; wish to work on shares if possible. Address A. LANZ, Fairmont, Los Angeles Co., Cal.

**WANTED.**—Situation by experienced bee-man, or will rent 200 colonies N. W. WHITE, 4723 Troost Av., Kansas City, Mo.

## Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

Italian queens from direct imported mothers, red-clover strain, \$1.00. Circular. A. W. YATES, 3 Chapman St., Hartford, Ct.

Golden yellow Italian queens my specialty; 1909 price list ready. Safe introducing directions. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.

D. COOLEY, Kendall, Mich.

Well-bred bees and queens. Hives and supplies.

J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to

T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

**QUEENS.**—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts.; select, \$1.00; tested, \$1.25 each. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Boyd, Ky.

Quirin's famous improved Italian queens ready in April; nuclei and colonies about May 1. My stock is northern bred, and hardy. Five yards wintered on summer stands without a single loss in 1908; 22 years a breeder. Honey for sale.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

Breeding queens of pure Caucasian and Carniolan races—price \$3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kieff, Russia. Remit with orders. Correspondence in English.

### Twentieth-century Edition

## Langstroth on the Honey-bee

Revised by C. P. Dadant

THIS book was originally written by the Rev. L. L. Langstroth, the founder of modern bee culture. Its first publication, in 1853, caused a revolution in bee culture, not only in America but all over the civilized world. It is the modern bee-keeper's epic. Father Langstroth repeatedly revised the book as the various editions appeared; but when he got too old he turned over his duty to a great friend of his, Mr. Dadant.

The French edition of "Langstroth on the Honey-bee" is the standard work on bees in France.

The work itself is quite comprehensive, and it covers the whole field of bee-keeping in its 575 pages. It has a very large number of excellent illustrations, some of them by Count Barbo, on the anatomy of the bee, being very fine examples of the engraver's art. In the first chapters the anatomy and physiology are dealt with; then the food of bees, etc. Comb and propolis are fully treated. Then follow chapters on movable-frame hives, wherein the evolution of our modern hives is traced. The ventilation of hives and cellars is excellently treated, and also observation hives. A chapter is devoted to the taming of the honey-bee. Swarming, both natural and artificial, is carefully considered, and primary and secondary receive a full notice. A long chapter is devoted to queen-rearing and nuclei. Doolittle's system of queen-rearing is fully explained, as also queen-introduction. Out-apiaries, robbing, and wintering are most thoroughly explained. As Mr. Dadant is a great expert on beeswax it is needless to say the chapter on that subject is fine. There are splendid chapters on the honey flora. Honey production, and foul brood. There is also a bee-keeper's calendar and a selection of axioms for bee-keepers generally. It is a great book, and the price is low for a handsome well-bound volume as this is. . . PRICE, postpaid, \$1.20

**Dadant & Son, Hamilton, Ill.**

## ≡ BIG DISCOUNT ≡

on all bee-supplies until May 1. Send for 1909 prices.

W. D. SOPER COMPANY, JACKSON, MICHIGAN.

## WANTED To Lease my Apiary

of 200 colonies of bees in Eastern Oregon. For particulars address J. T. HALE, Spanish Fork, Utah.

Have you read Doolittle's book, "A Year's Work in an Ont-Apiary," in which he gives in detail his plan for securing an average 114½ lbs. of honey in a poor season? See advertising on page 1.

## Convention Notices.

The third annual convention of the Western Honey-producers will be held at the Library Building, Sioux City, Ia., Wednesday and Thursday, Jan. 20 and 21. There will be three sessions—one at 2 and one at 7 P.M. Wednesday, and one at 9 A.M. Thursday. N. E. France, General Manager of the National Bee-keepers' Association, will be here to discuss bee diseases and State laws for the same; also wax-rendering. There will be several papers on other points of interest. You are cordially invited to attend, and invite others interested in bees and bee-keeping. Hotel headquarters at the Chicago House.

EDWARD G. BROWN, Sec.

## OUR EXCHANGES.

### LUMIERE PHOTOGRAPHY.

In *Country Life in America*, Doubleday, Page & Co. are using Lumiere photographs for illustrations. This is "the most conspicuous improvement of the age in printing." The Christmas issue of *Country Life in America* contains an article descriptive of Mr. Louis Tiffany's home, in which the illustrations are Lumiere photographs reproduced in color. The same process has been used in several of the advertisements. The schedule for 1909 includes, in addition to regular articles each month in *Country Life in America*, a novel by the Williamsons, entitled "The Motor Maid," to which the illustrations will be made in color from Lumiere plates.

### THE GUIDE TO NATURE.

Dr. Bigelow, the nature-study man, has found another field for his energies. An anonymous donor has placed at his disposal a sum of money sufficiently large to found a nature-study university. For the first attempt, the buildings will be of a portable kind; but if at the end of two years the effort proves a success, a complete set of permanent buildings will be erected. As president of the Agassiz Association, Dr. Bigelow will have complete charge of this institution, which will be the first of its kind anywhere. There are many biological stations throughout the world where the science of animal life is studied; but the new school just founded will cover a much wider field. The habits of animals, birds, insects, and fishes will be studied, both in a wild and a domestic state. Provision will be made for a more popular system of instruction and study than now prevails at scientific institutions. In the forthcoming number of *The Guide to Nature* Dr. Bigelow will outline his plans so that, should any of our readers desire to interest themselves in nature study, they will have an excellent opportunity for acquiring some first-hand knowledge from the great university of nature under the guidance of one who knows. *The Guide to Nature* is published at Stamford, Conn., as most of our readers know. It is very interesting, and beautifully illustrated.

## SPECIAL NOTICES

By OUR BUSINESS MANAGER

### WANTED—BACK NUMBERS OF GLEANINGS.

To complete our files we desire a few select copies of each of the following issues for binding: Jan. 15, 1907; Feb. 15, 1906; April 15, 1906, and June 15, 1906. We can not use any but perfect copies. When you mail any of the above, please put your name in the corner of the wrapper, and advise us by postal. For each copy furnished that we can use, we will send any one of our ten-cent books or advance your subscription two months. Furthermore, it will be a great favor to us if our friends will supply with their copies if not wanted for binding.

### HOW TO CONTROL SWARMS WHEN RUNNING FOR COMB HONEY.

This is the subject in Chapter IV. in Doolittle's "A Year's Work in an Out-Apiary." It is one of the valuable features of this book, but not more so, perhaps, than a good many other chapters. If you can not read the book you should by all means get it while our special offer is in force. See page 1.

### CATALOG FOR 1909.

Our new catalog for this year is somewhat delayed in completion, but we expect to have it on the press as soon as this issue is out, and should begin mailing before the first of February. It will contain eight more pages than heretofore, and will include four pages of honey-packages which, in last year's issue, were condensed to one. There are several new articles listed for the first time, which we believe will prove interesting and valuable.

### BOOKS.

We have on hand quite an accumulation of new and second-hand books, one or two copies only, of various titles. We have prepared a list of these, and to any one interested in it we will be glad to send a copy, showing the prices at which we can furnish them, so long as the stock remains on hand. Please ask for list of second-hand books.

### BUSINESS BOOMING.

There is every indication of a good sale in supplies this season, if we may judge from the number of orders we are receiving. We are running to our full capacity, and have been for some weeks, and have orders for some twelve to fifteen carloads ahead of us. Our dealers are preparing for a good trade, and are having a good supply of orders already. After such a season for honey as the past one has been in most places there is a disposition to stock up ready for another season early before the rush is on and a liability of orders being delayed.

### TYPEWRITERS.

We have on hand here and at branch offices several Smith Premier typewriters, model No. 2, some of them almost new, which we can furnish at a bargain, if ordered at once. The cost of these machines, new, is \$100 each. We have one which has had but limited service, practically as good as new, first-class in every respect, price \$75; another with a little more wear at \$60, and a third a little older, but good for ten years of moderate service, such as one writing not more than ten or fifteen letters daily would give it, price \$50. We also have one model No. 2 Remington, used about a month, cost \$100, which we can offer for \$75. Speak quick if you want one of these machines.

### HOW TO KEEP BEES.

We have recently arranged for a large stock of these books by the well-known author, Mrs. Comstock. It will be remembered that the price is \$1.00 with 10 cts. additional for postage. We club the book postpaid with *GLEANINGS* one year for \$1.50; and while we can not sell single copies at less than the regular rate, we have a special offer by which we can furnish two or more copies at a reduced rate. We especially recommend the book for those who are beginning bee culture or investigating the merits of it, or for one who wishes to make a present of a book on bee culture, which is at the same time both fascinating and instructive. No more suitable present could be made than this book.

# BEESWAX WANTED

WE are always in the market for beeswax, and will pay the best market price. We used last year in the manufacture of **Comb Foundation** over

## EIGHTY TONS

and are likely to need fully as much for this year's trade. Send your wax direct to us, being careful to pack it carefully for safe shipment, and mark it so we can easily tell who sends it. Write to us, at the same time sending a shipping receipt, and stating weight of shipment, both gross and net.

We are paying at this date for pure average beeswax delivered here, 29 cents per pound cash, or 31 cents in trade. On choice yellow wax we pay a premium of one to two cents a pound.

THE A. I. ROOT COMPANY, MEDINA, OHIO



# The Danzenbaker Comb-honey Hive

## MORE HONEY

The construction of the hive is such that the bee-keeper can easily produce a larger surplus of comb honey per hive, for the bees are not inclined to loaf during the early flow, but get more promptly at work at the right time.

## BETTER HONEY

The claim made for this hive, that it produces **better honey**, has never been successfully contradicted. True, an **expert** may with other hives get a result approximately equal to the Danz. results; but hundreds of letters received show that the **DANZENBAKER HIVE**, in the hands of the average bee-keeper, produces more fancy surplus comb honey than any other hive.

## MORE MONEY

This statement is easily verified. Fancy comb honey is always in demand, and especially in **Danz.** sections. A crop of fancy honey on an ordinary market always brings more money; and on a poor market the fancy honey will sell while the other grades have to be shaded to find a buyer. The following unsolicited letter verifies the statement.

ST. JOSEPH, MICH., Sept. 26, 1908.

I have 112 colonies, all in Danz. hives with the exception of ten; and they will go into the regular Danz. body in the spring. The regular Danz. hive, with the right management, is the best combination in the world for comb honey. I let the "big-hive" men laugh; but when we go to market their product is no competition to mine. The dealers say to them, "If yours is as good as Hall's, bring it in and we'll take it." And it is ALL in the form and management of the HIVE.

E. L. HALL.

Now is the time to make a trial order for these hives if you have not yet tried them. The workmanship is the best; the quality is the best, and the results are sure.

Price, 5 complete Danzenbaker comb-honey hives, with sections and foundation starters, and nails, all in flat . . . . .	<b>\$11.00</b>
5 hives as above, nailed and painted . . . . .	<b>15.50</b>

The hives may be had of The A. I. Root Co., Medina, Ohio, or at any of their branches, or of any reliable dealer in bee-keepers' supplies. The trade is supplied by The A. I. Root Co., Medina, Ohio, who are licensed to manufacture the same.

Accept no substitute. The results accomplished by the Danzenbaker hive are generally equaled by no other.

**F. DANZENBAKER (Inventor and Patentee).**

Before buying your Comb Foundation, or disposing of your beeswax, be sure to get our prices on wax and foundation, or our prices on working wax into foundation.

We are also in a position to quote you prices on hives, sections, and all other supplies. We give LIBERAL DISCOUNTS during the months of January and February.

**Remember that**

# **DADANT'S FOUNDATION**

**is the very best that money can buy.**

We always guarantee satisfaction in every way.

LANGSTROTH ON THE HONEY-BEE (new edition), by mail, \$1.20.

Send for our prices on Extracted, White-clover, and Amber Fall Honey.

**DADANT & SONS, . . HAMILTON, ILL.**

## **FOR OVER 25 YEARS**

our make of goods has been acknowledged to be in the lead as regards  
**WORKMANSHIP and MATERIAL.**

**Our AIR-SPACED HIVE is a most excellent winter hive,**

and fully as good and convenient for summer management as the single-walled. Same inside dimensions as regular Dovetailed hives; all inside material interchangeable with Dovetailed hives.

**We manufacture full line of BEE-KEEPERS' SUPPLIES.**

**WINTER DISCOUNTS:**

January, 3 per cent. February, 2 per cent. March, 1 per cent.

Catalog free.

**W. T. FALCONER MFG. CO., Jamestown, N. Y.**



# CALIFORNIA PRODUCTS

Buy Them  
Direct--  
Where they  
Grow.

## DRIED FRUIT

Assortment No. 1.

- 18 lbs. Prunes, large size.
- 10 " Peaches.
- 10 " Apricots.
- 4 " loose Mus't'l raisins
- 4 " seeded Muscatel "
- 4 " seedless Sultana "

**50 lbs.—price \$6.00.**



### We Guarantee

every California Product which we sell and stand ready to refund your money if unsatisfactory.

We Pay  
the  
Freight

to any Railway Station in  
the United States.

## CANNED FRUIT

Apricots, Peaches, Pears,  
and Plums.

Large selected Fruit put  
up in heavy cane syrup.

Orange-sage Honey.  
Soft-shell Walnuts and  
Almonds.

### ANY LANGUAGE WILL DO FOR US

Schreiben Sie uns in Deutsch

Schryt ons in het Hollandsch

Tils skriv os paa Dansk

Skrif pa Svensk

Skriv paa Norsk

Ecrivez nous en Francais

Scrivetezi Italiano

Escribanos v. en Espanol

Napisu v Cesky

Pisi donasi po Polska

*OUR REFERENCE: First National Bank, Colton, Cal. Write them.*

We shipped our products last season to every State in the Union, also Mexico.  
Write for price list of all assortments, and full particulars.

### PROMPT DELIVERY

# California Fruit Products Co.

AVENUE I, COLTON, CAL.

# Buy a Paper That Can Sell Goods

Your business letters are like salesmen. They represent you and tell your story to your prospective customers. They call on your regular customers, and keep them in touch with you.

The wording of the letter may be compared to the salesman's argument. The *paper* upon which it is written corresponds to the salesman's *dress*.

Would you send your salesman out in shabby clothes and soiled linen?

It is just as disastrous to send your *letter salesman* out too poorly dressed to represent you properly and to meet the forces of competition.

## Old Hampshire Bond Typewriter Paper

used for your stationery will at once impress the men you write favorably, and help them in making up their minds to do business with you. Cheap paper might have scarce gained attention.

It is not exaggeration to say that the success of your letters often depends upon the paper used for your stationery.

Old Hampshire Bond Typewriter Paper is the *choicest* product of a New England Mill making Bond papers only. We want you to have the specimen booklet showing the different numbers. A request will bring it. It's a booklet you should have.

Hampshire Paper Company, South Hadley Falls, Mass.



# GLEANINGS IN BEE CULTURE

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H. H. ROOT, Assistant Editor.  
A. I. ROOT, Editor Home Department.

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NO. 2

## EDITORIAL

By E. R. Root.

It is a good time now to bottle honey for the local trade. There is a large amount of literature bearing on this question; and if the reader has any extracted honey that drags on his hands, let him try bottling, supplying his local groceries with the product.

OWING to a considerable amount of advertising matter coming in at the last moment we were compelled to leave out two pages of editorial matter from our last issue. Our readers will have noticed that, with the exception of editorials, all the department writers are confined to one page. This was necessary in order to increase our questions and answers in the Heads of Grain department.

### HOW TO LIQUEFY CANDIED HONEY WITHOUT IMPAIRING ITS FLAVOR OR COLOR.

MR. E. E. COVEYOU, of Petosky, Mich., the man who does such an extensive business in bottling honey, says that it is very important, in liquefying honey, to draw off the melted portion as fast as it melts. If the liquefied product is kept under heat until all the solid portion of the honey has become dissolved, it will lose some of its delicate flavor and darken somewhat in color. The same suggestion has come from other sources; and we may say in addition that Mr. Coveyou's experience has been quite in line with our own. It is a fine art to liquefy honey, and do it right, without impairing the flavor or color.

Right in this connection we discovered in our experiments with the capping-melter that it was important to allow the free honey to run off as fast as the cappings melt. The conditions in a capping-melter are much the same as those that are present in a tank that is melting up candied honey.

### SPACING THE COMBS WIDER APART FOR WINTER.

The suggestion has been made by a recent correspondent that, for outdoor wintering at least, the combs should be spaced wider apart than the summer spacing in order to give the bees more clustering room. Having tried it with good results he wished to know why the plan was not more generally practiced. Years ago we, in common with others, did this to a considerable extent. We also tested some colonies with regular spacing and others with wider spacing side by side, but could see no difference. During the last twenty years, during which we have used Hoffman frames spaced  $1\frac{3}{8}$  from cen-

ter to center, we have left the combs in winter spaced just as they were in summer; and any one who has followed our wintering knows that we have been generally quite successful.

### THE BEE-KEEPER'S REVIEW PROSPERING.

THE *Bee-keeper's Review* is now in a new and larger home of its own. Mr. Hutchinson and his son-in-law bought out a printing-plant formerly owned by the Michigan Paint Co. This has been renovated and reequipped with about \$1000 worth of new machinery, and the editor is now looking forward to the day when he can carry out some of his ideas toward making a better *Review*. It has always been a good paper, both typographically and for the real helpful subject-matter which it contained. Mr. Hutchinson has a very pleasing way of injecting his own personality in all of his writings; and there is no reason why his journal will not grow better and better. GLEANINGS extends its congratulations and best wishes.

### ALFALFA.

A NEW bulletin from the United States Department of Agriculture, Farmers' Bulletin No. 339, entitled "Alfalfa," has just been issued. This is a very comprehensive treatise, taking up the general subject of alfalfa and its cultivation, both in the Eastern and Western States. Any one who has any thing to do with the growing of this important forage-plant will do well to secure a copy of this bulletin. It is free.

On page 30 we note that "it is the practice in the West to cut alfalfa hay for sheep just as it commences to bloom, instead of when one-tenth in bloom, as is customary for dairy cattle, or when one-half to two-thirds in bloom for horses." On the subject of alfalfa for bees we find this:

The development of the honey-producing industry in the West has been practically coincident with the extension of alfalfa culture. Statistics indicate that the heaviest yields of honey per stand of bees are secured in the sections showing the greatest acreage of alfalfa. That the honey is of good quality is evidenced by its standing in exhibitions of this class of products. The number of times that the alfalfa-fields come into blossom during the season makes possible the gathering of successive crops of honey.

### THE FALL DROUTH, AND DID IT KILL THE CLOVERS?

In response to our request on page 1426 of our Dec. 1st issue for information as to whether the severe drouth last fall had killed clovers so that there would be a light crop of clover honey next season, we have received a large number of reports. In the main they go to confirm the statement made by our farmer friend on p. 1365, and again on 1426, that the clovers are in good condition, and that a fall drouth has not killed them.

provided winter snows and spring rains follow in proper succession.

There are some among the number who say that, where the drouth began in August and continued up till cold weather, the probabilities are that the old clovers have been killed.

One writer goes so far as to say that the drouth has been so severe in his locality that he predicts there will be no yield of clover next season, and he has, therefore, moved his bees to pastures new.

All agree that the young clovers, if the old ones are killed, would, with a proper spring and summer, spring up, but that they would not yield much honey. Their time for furnishing nectar would not be due until the season following.

On the subject of winter-killing, as to what it means, it is explained that a rainy winter, followed by alternate freezing and thawing, during which the soil assumes the appearance of a honey-comb, will destroy the clovers, because the action of the expanding and contracting of the soil results in separating the top from the roots, and the fine roots from the main ones. The general effect of this is to injure or kill the plant outright.

Thus far the winter throughout has been dry in most of the Northern States. Needed rains and snows have fallen pretty generally; and there has been, therefore, but little of the destructive honey-combing of the soil by which the clovers are dismembered. If deep snows should now come on, there would probably be no serious damage to the clovers.

As nearly as we can glean from the various reports published in this issue, it is apparent in some localities that some of the clovers have been killed, so that there will not be much honey from clover next year. In most places the plants have not been destroyed. It is our opinion, based on the majority of reports, that there will be a fair crop of clover honey next year in the country generally, although in some sections, of course, there will be practically none.

#### DEATH OF MR. C. H. W. WEBER.

It is with much regret that we record the death of Mr. Charles H. W. Weber, of Cincinnati, on New Year's day. Those who attended the Detroit convention will remember seeing him at that meeting; but, unfortunately, he was not well, as he said that he was afraid he would have to get under the care of the doctor as soon as he could get home. Shortly after that, we learned that he had undergone a serious surgical operation, but he apparently recovered from that. When in Cincinnati some weeks ago we called to see him at the hospital, and found him doing quite well, and anxious to get home. As we had had some hospital experience of our own we cautioned him to make haste slowly. We left him with the belief that his recovery would be complete. Some weeks afterward we received news from his family, to the effect that his condition had taken a sudden turn for the worse, and it was feared that he would not be able to recover; he apparently rallied somewhat from this, but it was for only a short time, and just as the new year dawned he passed away.

Mr. Weber was born in Lemfoerde, Germany, April 1, 1844. In May, 1899, he bought out C.

F. Muth & Son. Although well advanced in years at the time, he took up the general subject of bee-keeping with an enthusiasm seldom shown by one of his years. He began the selling of supplies, and of bees and queens. He had quite an apiary on the roof of his building. His business continued to grow, and in the mean time he had good help in the persons of his son and daughters. Mr. C. W. Weber, a son, has had practical charge of the business for the last six or seven years. He is an energetic young business man, having sold honey extensively all over the country; and it goes without saying, that the business in the future will go on as before.

In the line of bottling honey the Webers have a very complete plant. When I called there last, Charley showed me a special invention of his own for bottling honey in a wholesale way. So extensive is his bottling business that he used a rotary pump for pumping honey from one tank to another. Indeed, he is in position to do and does do a large business.

We are sure that the sympathy of all our readers will go out to the surviving members of the Weber family, especially to his son Charles, upon whom the responsibility and management of the business has fallen. The junior Weber is no novice in the business, having grown up in it as the practical manager of both the supply and honey departments.

#### INCREASING THE WORKING ENERGY OF BEES BY SHAKING; IS THE PLAN A JOKE?

In the *Bee-keeper's Review* for December appears an article by Mr. G. W. Williams on the subject as above. In this the writer says he believes that new life can be shaken into bees whenever they show a tendency to loaf. From some experiments that he has conducted in a small way he is inclined to think there are big things for the future in scientific jarring.

He bought six colonies of bees of a neighbor which he desired to have about fifty feet away on his own premises. To prevent their going back he shook all the bees in front of their respective entrances after the hives had been moved. Nearly every bee stayed. When it came time to put on supers he shook the bees in front of their entrances again. It became apparent that those that had been shaken were in advance of his other colonies not so treated. One colony in particular that had not received the "quakes" was sulking; but after it had been "dumped" he said it started immediately to work. At other times when he found a colony hanging out he would rap on the hives to induce the bees to fill themselves. Then he would shake the bees off the frames and out of the supers, when, presto! new energy seemed to be imparted.

He goes on to tell how he shook his bees in the spring; how he shook them to stimulate them; shook them to make them go into the sections; shook them when they loafed; shook them when he introduced queens; in short, he shook them on *general principles*.

At first Editor Hutchinson was inclined to believe that this jolting business was a fancy or a joke; but on further reflection he believes there may be something in it.

Those who attended the Detroit convention will remember that the editor of *GLEANINGS* gave



a talk on this subject, explaining how the most vicious bees could, by proper shaking, be made as tame as kittens. We also stated at that time that, in our opinion, the shaking might be used in a practical way in the production of honey; for introducing queens; in fact, for a great variety of purposes.

In the various lectures that we have given before the bee-keeping public, during which we have given live-bee demonstrations, we have learned that it is possible to do a large number of hair-raising stunts after the bees have been subdued by the shaking process. They are shaken off the combs into a large dishpan, when the pan is shaken a good deal like a corn-popper. The bees roll over in a confused mass; and after about a minute of rolling and tumbling they can be picked up with bare hands with perfect impunity providing they are not pinched. We are, therefore, inclined to believe that there is more in this shaking, for the accomplishment of practical results, than many persons are inclined to believe.

The "shook-swarm" method that was discussed so much two or three years ago gave excellent results, both in the matter of controlling swarms and in the production of honey. The method advocated by Mr. Williams is precisely the same, only he goes much further. He does nothing more nor less than to put the bees in the condition of a swarm. As every one knows, a swarm is always more energetic than an ordinarily normal colony.

We shall be glad to get reports from those who have had an opportunity to try this scheme of earthquakes on a small scale. No doubt it is quite possible to go to extremes.

*Later.*—Since writing the foregoing we have read what one of our Department Editors, Mr. Louis Scholl, has to say on this subject. See page 53.

#### DOOLITTLE'S BOOK ON NON-SWARMING.

This work is going off like hot cakes. So great has been the demand for it that the first edition was exhausted inside of thirty days. We have now gotten out an entirely new reprint and a much larger edition.

There are many of our readers whose subscriptions are about to expire; and in order not to lose a single number we are making an exceptionally low combination offer—namely, *GLEANINGS* one year and Doolittle's book, 50 cents, for the price of the paper alone—\$1.00. Even if you read the series of articles in *GLEANINGS* you will surely want the whole set in one cover to facilitate ready reference.

Besides the one important subject of the prevention of swarms when running for comb honey at out-apiaries, Mr. Doolittle has discussed in his characteristic and forcible manner many others almost as important, particularly those relating to the production of fancy comb honey, and how to secure a crop when every one else meets a failure. Indeed, the author has condensed his forty years of experience into this one volume, and no reader of these pages should fail to get it. The book can not now be had except in connection with subscription to *GLEANINGS* (our former sale price of 50 cents being withdrawn). If you have already renewed for 1909, send your renewal for

1910 at \$1.00, or order the journal for a friend, and we will send you a copy of Doolittle's book for your trouble. As an evidence of what can be done with the Doolittle system we introduce a letter here from Mr. C. H. Root, which speaks for itself.

#### DOOLITTLE'S PLAN FOR PREVENTING SWARMING ENDORSED.

I have tried Mr. Doolittle's plan for swarm prevention, as first described in *GLEANINGS*, for two years. The first year, with five colonies, I had a loss of two swarms (my fault). This year, with about forty colonies, I did not lose a swarm, and I had a larger yield of honey than I ever had before.

Red Bank, N. J., Nov. 19.

C. H. ROOT.

This is a sample of many that we have been receiving; and what others have done you can do. Remember, you can not get this book except in connection with a subscription to *GLEANINGS*.

#### ALEXANDER'S WRITINGS IN BOOK FORM.

Perhaps no series of articles ever evoked more general interest and discussion than those written by the late E. W. Alexander, of Delanson, N. Y. He was one of the contemporaries of Quinby, Langstroth, Hetherington, Grimm, and Hoffman, besides many other great lights in the early days of apiculture. He survived them all, and it is only within the last three months that death claimed him also; but, like many another, his works live after him.

Mr. Alexander had a very remarkable bee-keeping experience. For many years he was one of the most extensive producers of honey in the United States. But the thing that, perhaps, more than any thing else brought him celebrity, aside from his very interesting and helpful writings, was the fact that he managed for a number of years an apiary of from 500 to 700 colonies all in one location. He had a locality that was quite remarkable, and brains that knew how to use it.

Well, in this series of articles Mr. Alexander describes many of the secrets of his great success. Scarcely a bee-keeper at the time of his death had had more experience in keeping bees; and yet almost up to the last moment his enthusiasm for his chosen pursuit was as keen as that of a beginner passing through the various stages of bee-fever. He was a genius, and as such he propounded some theories and advanced some practices which to some seemed unorthodox, and his articles, as a consequence, drew forth not a little comment and criticism. But he always came back with that same gentle rejoinder that characterized the sweetness of the man's entire life. Nor was he unable to give a reason for the faith that was in him.

This work, now in the press, will be clubbed with *GLEANINGS* for the price of the paper alone—\$1.00. The regular price of the book is 50 cents; but it will not be sent separately except in connection with a subscription to *GLEANINGS*, and all arrearages, if any, paid. If a reader has already renewed his subscription for 1909 we will accept his subscription for 1910 at \$1.00, and send on the book as soon as it leaves the printer's hands. We hope to have it ready for distribution in about two weeks.

There may be some who desire both Alexander's and Doolittle's books. Send us \$2.00 and we will send *GLEANINGS* two years and both books, or for one new subscription at \$1.00 and your own renewal at \$1.00 we will send you the two books.

# STRAY STRAWS

DR. C. C. MILLER

J. W. GEORGE, here's my hat off to you and your Imperial crowd, p. 37.

"WHITE CLOVER being an annual," page 40. Isn't that a mistake? In this locality it's a perennial. [Yes, everywhere Thanks for calling our attention to the uncorrected error.—Ed.]

T. B. TERRY, in *Practical Farmer*, wonders why I don't continue eating wheat. Friend Terry, in college I was my own cook. I'm married now. But my wife swears by Terry; and if you say I ought to be eating wheat, no doubt I'll be at it again.

NOT SO LONG ago I wrote a honey leaflet in which I gave 60 lbs. of sugar as the average consumption in the United States. The increase since then has been enormous; latest United States reports say 82.6 lbs. for each man, woman, and child, of continental United States.

THE EMPEROR OF GERMANY has sworn off drinking. President-elect Taft has done the same thing. Ohio has a new county going dry every few days. Oh! we are living in glorious times. [If more of our big men will take this stand it will help still more to further the cause of temperance.—Ed.]

FRIEND HAND, I'm with you for improvement in breeding, p. 26, and I believe superseded is bad with bad stock; but I believe it's good with good stock. I know that, in nature, there's survival of the fittest; but did it never occur to you that every fittest queen that survives ends her career by superseding?

GEORGE W. WILLIAMS asks me what I think of shaking up bees as a stimulus to honey-getting. Friend Williams, it looks to me like rank nonsense; but when two such men as you and Scholl get after me it shakes *me*. Your testimony is strong; but it will be stronger if, next year, you shake and then report difference. [See editorial in this issue, page 48, on this subject.—Ed.]

R. C. AIKIN, in addition to what you say, p. 25, I've seen bees plaster white wax on a feeder. I wonder if it may not really be that all secretion of wax is an involuntary result of gorging with honey, which gorging may be voluntary or involuntary. If so, we might say that secretion is generally voluntary, but sometimes involuntary. [Mr. A. has something to offer in this issue on the subject. See page 61.—Ed.]

GOVERNMENT REPORTS say that in 1907, for the first time, the production of beet sugar exceeded that of cane—967,000,000 lbs. of beet against 544,000,000 of cane. [I think what you say applies to the world's production of sugar—about 5,000,000 tons of beet and the same of cane. The United States alone consumes about 3,000,000 tons as follows: Cuba (1909), 1,500,000; Porto Rico, 250,000; Hawaii, 400,000; Louisiana, 250,000; beet, 400,000, and the West Indies and Java for the rest. The *per capita* consumption for the United States is 82 lbs., and Great Britain 95 lbs. (mostly beet sugar).—W. K. M.]

HARRY GRIFFIN wants me to tell why I think "it is honest as well as profitable to use full sheets of foundation in sections." What can there be dishonest about it? Foundation is pure wax, and I don't notice any difference in eating it. If it were dishonest to fill the section, would it be honest to use a starter? It is profitable because bees do faster work, fill the section more evenly and securely, making all worker comb, which makes a better-looking section, and does not tempt the queen to go up as drone comb does. [Quite right you are.—Ed.]

A. I. ROOT, if you can get people to use that Coward shoe, p. 1514, or even if you can do any thing to get them to wear shoes half way comfortable for their feet, you will accomplish a feat. It isn't altogether that the present shoe differs in shape from the foot. The greater trouble is the insisting that a No. 6 foot shall go into a No. 5 shoe. Personally, although I'd rather have a shoe the shape of my foot, I get on fairly well with the ordinary shoe. Never a corn to my name—or to my foot. But I've always insisted that, whatever the shape of the shoe, there must be room in it for my foot. After you get everybody to wearing Coward shoes, there's another thing for you to tackle. That's the stoutness of the shoe. Take a man and a woman of equal strength, with feet of the same size, and the woman will insist that she can not wear a shoe as heavy as the man's. Now please tell me why.

JOHN SILVER, *Irish Bee Journal*, page 74, says: "Concerning the remarks of Editor Root and Dr. C. C. Miller, in GLEANINGS, on my statement in August issue of *Irish Bee Journal* on queen-rearing, permit me to suggest to Dr. Miller that it is not the heat of the hive nor the strength of the colony which accounts for the difference in the time of a queen's hatching. For example, I have had three cells sealed during the same morning. One would hatch in six or seven days after being sealed, another eight days, while the third might take nine or ten days. I have further observed that some of the best-developed queens are those which take nine days to hatch after being sealed; consequently I can not agree with Dr. Miller that it is the heat of the hive, because different times occur in the same hive, or that a queen is any the worse for taking 17 or 18 days to hatch." Thanks, friend Silver, for additional facts. Every fact helps. If I understand you aright, in the same hive there was a difference of about three days in the time occupied by two royal larvae from sealing to emergence. But we are to conclude from this that there was a difference of three days in the length of time from the laying of the egg to the emergence of the queen? Might it not be that there was a difference of three days in the ages of the two larvae at the time of sealing? I do know this: That I have been very much surprised in a few cases, upon opening a sealed cell, to find the larva quite small. It looks a little as if the bees said to themselves, "Here's a larva in this cell that's pretty young yet; but there's more food in the cell than it can possibly use, and we may as well seal it up and done with it." At any rate, if my observation is worth any thing you may take it as a fact that at times a very much smaller larva is sealed than at other times.



## CONVERSATIONS WITH DOOLITTLE

### VARIOUS POSITIONS OF THE ENTRANCES IN WINTER; UPWARD VENTILATION.

"Mr. Doolittle, you can remember how they used to winter bees before the movable-frame hive came into use, can you not?"

"Yes. Our bees were first kept in the Weeks patent hive, which had a bottom-board attached to the hive with wire hooks, which were so arranged that, by turning a button, the bottom-board would hang down from the hive an inch below the bottom all around during winter or during hot spells in the summer months. By pushing this bottom-board forward, and turning the button another way, it would come up tight against the hive, and project in front two inches for an alighting-board. The entrance was cut from the bottom of the hive, so that, by turning the button, all could be closed secure except the entrance, which was enlarged and contracted at will by the sliding door, which was simply a strip of tin free to move in a groove. The front of this bottom-board was some three inches lower than the back, so that any dirt, cappings of brood, moldy pollen, larvæ of the wax-moth, which the bees might release from the combs above, and particularly all dead bees which died during winter, would roll down and out of the hive, thus keeping the hive free from moths and dead bees during the whole season. I can almost see that Weeks salesman now as he rolled off in the smoothest terms the *great* value the Weeks hive had above all others, especially for winter."

"What were his claims for the lowered bottom during winter?"

"Lower ventilation, claiming that such was the best thing then in sight for safe wintering of bees. Things went on all right for several years, as our home then was what would now be called a clearing in the woods; but a few years later, after the woods had been cut off more, father had poor success in wintering bees, while a neighbor wintered his successfully with the hive tight at the bottom and a two-inch auger-hole at the top. Seeing how successfully bees wintered for our neighbor, father bored holes in the top of part of our hives, and left the button turned, thus closing the entrances to such hives, while the rest were left as before. Those having the hole at the top with the closed bottoms wintered so much better, and proved themselves so much better in every way, that the bottom-boards were left fastened to the hives during winter with all of the colonies, the bees being allowed to go in and out from the holes at the top. After this we had very little trouble in wintering."

"Do you use holes at the top of the hives now?"

"No. After a few years father lost all of his bees by that dread disease, foul brood, and no more were kept in the family till I purchased again in 1869. At that time there were plenty of bees kept near me in box hives, many of which were set on blocks, raising the hive from the bottom-board from one-half to one inch, as recommended for wintering on the lower-ventilation plan."

"Did you raise your hives in this way?"

"No. I adopted the upward-ventilation theory (it was considered by nearly all only theory then), but not a direct current of air through the hive. After a series of severe winters, myself and three or four others had about 300 colonies of bees which wintered with upward ventilation every year, while not one of the box-hive or lower-ventilation men had a single colony."

"Were you still using the holes at the top of the hives?"

"No. About this time I began hunting bees in trees by going through the woods on the first warm days in early spring while the snow was on the ground in the woods, when, by the dead bees dropped on the snow during their first house-cleaning time, the tree containing the colony could be easily found. These trees were cut later, the bees and combs transferred into movable comb hives, this giving me an additional start in bees. By looking at these natural homes of the bees in these hollow trees I could find that the hollow in most cases was composed of partially decayed wood, especially from one to three feet above the combs. This seemed better to me than holes at the top of the hive, for in winter the moisture from the bees passed into this decayed wood which surrounded them, while, later on, it would be expelled each summer by the heat. In this we had something pointing toward the advisability of a porous covering for our bees for winter, from which idea originated cotton-padded comfortables, supers filled with forest leaves, sawdust, and ground-cork cushions, chaff hives, etc., all of which have had their advocates."

"What about the entrances where such were used?"

"Some closed the entrances entirely, believing that the bees could get all the needed air through the porous covering above, while others left the entrances wide open. I made a rim of  $\frac{3}{8}$  inch stuff,  $1\frac{1}{2}$  inches deep, putting this under each hive so that the dead bees and dirt could drop down into it and away from the combs and bees above. Then leaving an entrance in the top of this rim  $\frac{1}{2}$  inch deep by  $2\frac{1}{2}$  inches long, I leaned a wide board up in front of the hive and this entrance. This allowed the bottom of this board to stand out and away from the hive and entrance some four to six inches, when, in this way, I had nearly the same thing we had with the Weeks hive, without any of the disadvantages that hive contained during the winter."

"I see. That board kept the wind from blowing into the entrance, while at the same time the bees were allowed to fly during suitable weather by coming out around the ends of the board."

"Yes; and the chaff and sawdust cushions, directly over the combs, absorbed all the moisture so that the bees were kept dry and nice."

"Do you recommend wintering in that way?"

"Yes, where bees are wintered out of doors. But for our long, extremely cold winters here in Central New York, I would recommend cellar wintering in preference to any plan in which the colonies are left out. Central New York is now a very different place from what it was fifty to seventy-five years ago, when four-fifths of the land was covered with forest. Now nine-tenths of the land is nude and bare, except during the summer months, when the regular crops are growing on it."

## SIFTINGS.

By J. E. CRANE

### TELLING AGE OF QUEENS.

On page 1304, Nov. 1, Dr. Miller tries to tell the difference in the looks of an old and young queen, and has succeeded pretty well. You wouldn't have thought it, but I believe he has missed just the best word for this purpose; and that is the word "dull," for describing color. Whether the queen is black or yellow or chestnut when young, the colors are bright; but when old they have a dull faded look.

### WHEN A COLONY HAS STORES FOR WINTER.

Page 1363, Nov. 15, Dr. Miller quotes Quinby as saying that "a colony which has stored in supers may be expected to have plenty of stores for winter." He then gives, as a reason why it is not true to-day, that it is because he said it before the days of extracted honey. Well, it is true a super in those days meant a box for storing comb honey in, and not for extracting; but it is also true that it was in the days of box hives with a few small holes from the hive into the super; also when the hive he used was 12 inches deep; and perhaps the best reason of all was because he lived in a buckwheat section where bees could usually gather honey till frost. See?

### CAPPING-MELTERS.

On page 1375 we find an article by H. H. Root on capping-melters, nicely illustrated. The article is written in such a frank, candid way, and the conclusions are so straightforward and sensible, that it must commend itself to all. My son said to me the past summer that we must have a capping-melter another year. I replied, "Yes, perhaps;" but I meant no, for those I had seen illustrated seemed quite too complicated or expensive to be worth while; but this article places the whole subject in a new light, and we feel as though we must fall into line or be left behind.

By the way, the side lights thrown upon Mr. Fowls, his family, and business, are fine, and I feel as if I had made them a visit—at least I feel better acquainted with them.

### WAX FROM OLD COMBS.

I do not think, Mr. Editor, you emphasize the value of old combs for melting quite enough, p. 1366, Nov. 15. I believe of late years we average not far from 3 lbs. of wax from each 8 old combs melted, and we find our medium foundation to run about 7 sheets to the pound, thus giving some 20 sheets of foundation for the eight old combs; and the 12 extra sheets of foundation more than pay for the work. But we do not, as a rule, find new sheets of foundation as valuable as drawn combs, and especially those of some age, for some purposes. Bees will spread their brood or store honey during the cool spring weather much faster in old than in new white combs—at least they much prefer the old dark combs until hot weather comes. [See editorial, p. 1425, Dec. 1, and Dr. Miller's comment, p. 1488, Dec. 15.—Ed.]

### SHOULD THE PRODUCER BE PAID FOR THE CANS IN WHICH THE HONEY IS SOLD?

Page 1245, Oct. 15, Dr. Lyon thinks a gross injustice is being done the bee-keeper for not allowing him at least half the cost of his tin cans containing extracted honey. Dr. Miller, page 1303, Nov. 1, thinks if the producer gets half a cent more for honey in cans than barrels he is amply repaid. I think Dr. Miller is right. I believe any one who has dug granulated honey from large barrels in winter would rather pay the half-cent extra for the tin cans.

But there is another side to this question. If the buyer had to pay the producer half the cost of his cans, why should he not pay half the cost of the barrels and half the cost of the cases comb honey is shipped to market in? Let's see. The producer of *extracted* honey buys a case of two cans for 50 cents; fills them with honey, and sells the whole for \$10.00, his containers costing him five per cent of what he gets. The *comb-honey* producer, for 18 cts., buys his shipping-cases that hold 20 lbs. of honey, and gets, say, \$3.00 for each case, so his containers cost him six per cent of the whole. This is a larger percentage than that of the man who sells extracted honey in new tin cans.

But Dr. Lyon may say the cases in which comb honey is sent to market are of no value except for kindling after being used, while the honey-bottler turns around and sells his cans for what he can get. This seems to gall Mr. Lyon more than any thing else; but, after all, it seems to me this is not half so bad as in some other branches of trade. Take the apple-producer who has to pay 35 cts. for his barrels, and gets \$1.75 for his barrel after being filled with his choicest fruit. The barrel goes with the fruit; and yet when empty it is worth nearly as much as when new. The apple-producer pays 20 per cent of what he gets, while the producer of extracted honey pays but 5 per cent.

It is almost universal custom in this country to sell packages with the goods they contain. The only exceptions I think of now are egg-crates and crates for shipping small fruits, both of which are returned to the producer.

We have sold a good many five-gallon cans the past year. As we sold cheap, it saved those who bought about as much as we saved by selling. In some cases we have bought back the same cans filled with new honey, none the worse for the exchange.

### CASES FOR CANS.

Cases in which tin cans are shipped are not always as substantial as they should be. We get them split and broken badly, and in some cases they are entirely gone. There is also less care taken in nailing them up than there should be, for some cans (I will not say many, although I feel like it) have nail-holes in them. In some other cases the caps are not screwed down tight, and the loss from this source would surprise those who ship honey could they see it.

It does not seem to stimulate the Christian virtues, in emptying a five-gallon can, to find that, owing to a little nail-hole in a lower corner that has been overlooked, the honey has mostly run out of the can, and its place taken by water from the melting-tank. My brethren, these things ought not so to be.



## BEE-KEEPING IN THE SOUTHWEST

BY LOUIS SCHOLL

It is a good time now to have all your necessary hives, supers, and other supplies on hand to put up these wintry days when very little else can be done. That's the way to have "the tub ready when honey comes pouring down." It pays. Order early, save the discount, avoid the hurry and worry, and be ready for the honey and — money.

### PROSPECTS FOR NEXT SEASON IN TEXAS.

There will be lots of swarming next spring in these parts of Texas if the season is favorable. The hives are chock full of good fall honey. Late breeding made the colonies strong, and preparations for controlling swarming should be made as early in the spring as possible. Give plenty of room, prevent a crowded brood-nest, give ventilation at the entrance, and keep the bees too busy and contented to swarm.

### UP OR DOWN STROKE IN UNCAPPING.

That's a fine picture on page 1378, showing a man uncapping a comb over the new capping-melter; but what interests me is the fact that he uses the upward stroke in uncapping, drawing his knife from the bottom or lower end of the comb upward to the upper end. I have tried both the up and the down stroke in uncapping tons and tons of honey, using many different knives, and I often wonder why the upward stroke is used. I have tried it often, especially to find the better way, and I have come to the conclusion that downward shaving is what I prefer. It seems easier to me; the knife can be handled better; the comb need not be tilted so far, and the cappings fall over and off readily instead of hanging to the knife.

That butcher-knife that we have used for several years for uncapping has been improved from year to year; that is to say, a better one (in our estimation) has been adopted. Our first knife was a straight pointed one. The next had a somewhat larger and rounding point to get into the "low places" more easily. That was an advantage. But it was often difficult to shave off the cappings with the straight cutting edge when the top-bars were wide, and the cappings did not extend beyond the edges of these top bars. This difficulty was overcome by using a knife this season with a slightly curved blade, so that the cutting edge, being more or less rounding, would reach down into the comb, and thus get the cappings off with ease.

### "SHAKING" ENERGY INTO BEES.

That bees can be stirred up to greater activity by certain manipulations seems to be an entirely new subject to some of our bee-keepers. Editor Hutchinson, in the December *Review*, in referring to an article on that subject by Geo. W. Williams, on page 367, of the same issue, says it reads like a fairy tale; but he adds that he has stopped laughing at new inventions or ideas that appear too ridiculous to be true, and he urges

that the plan be given a trial. There is much of truth in this idea, and we have made use of it for several years. The discovery (?) was already made by me in my first bee-keeping years, more than a dozen years ago, and ever since that time it has been practiced in our apiaries. Many times I have claimed that this was the secret of being able to "squeeze" just a little more honey out of the same localities where other bee-keepers were doing only fairly well.

Several times I have called attention to this matter under the subject of moving bees just before a honey-flow. Besides my article on this subject on page 1494, last year, reference to the same matter is made on page 388, March, 1907. Besides these, mention has been made of the value of manipulating the bees to stir them up into "energy" several times when writing about the use of the divisible-brood-chamber hive, etc. This plan is a valuable one that has been overlooked. Try it the coming season.

### SHALLOW OR DEEP ENTRANCE CLEATS ON BOTTOM-BOARDS.

In making several hundred hive-bottom boards, cleats for only  $\frac{3}{8}$ -inch-entrance room are provided this year. We have tried different depths of entrances, and find  $\frac{3}{8}$  best for winter; but this must be enlarged to at least  $\frac{3}{4}$  inch during the working season. We had trouble with  $\frac{3}{4}$ -inch spaces running clear back under the frames, because the bees are inclined to build "ladders" up to the bottom-bars of the frames, and it is often impossible to loosen them from these. With the space diminishing to  $\frac{3}{8}$  inch at the rear, this is obviated. For several years, narrow strips from shingles were used on the side cleats during the working season. These were removed in the late fall. We do not like permanent cleats  $\frac{3}{4}$  inch thick in front and  $\frac{3}{8}$  in the rear, as the entrances can not be lowered when desired. Neither do we favor reversible bottom-boards — too much fuss. Instead of all these we now place under the middle of the front end of the hive a small stone or any thing else we can find that is about  $\frac{3}{4}$  inch thick. This gives not only a large entrance, but more ventilation, as the opening extends part way along the sides of the hive. The bees do not bother one's feet or legs, as they are driven away from the sides by the few puffs of smoke always given at the entrance. By inserting the hive-tool in the entrance it is an easy matter to pick up something and place it under the hive in only a few moments. The objects are removed in the same way. They cost nothing, save time and labor, and serve better for the purpose than any other contrivance that has come to our notice.

We make all our bottom-boards now out of rough yellow-pine lumber, which lasts longer than white pine. Besides, they are made stronger. Two six-inch boards and one four-inch, 22 inches long, are nailed on a two-inch cleat at each end, with nails long enough to be clinched. The narrow  $\frac{3}{8}$ -inch side and back cleats are made out of box lumber. [Dr. Miller advises extra ventilation at the bottom of hives containing strong colonies, and in some cases he even goes so far as to place blocks under all four corners. — ED.]

## GLEANINGS FROM OUR EXCHANGES

By W. K. MORRISON

### SHAFTAL (A NEW CLOVER).

Secretary Wilson, of the Department of Agriculture, in his annual report for last year makes the very interesting announcement that Prof. N. E. Hansen, one of his plant-explorers, has discovered in the valleys of the Himalayas a promising new species of clover which, it is hoped, will form a crop rotation for cotton. The department has under consideration other promising new species of clovers from Siberia and Central Asia, adapted to the climatic conditions of the Northwest. Among them are two new species of alfalfa.

### VERY INTERESTING.

According to reports in the daily newspapers a case of peonage has been discovered at Argo, Ill. It is said that over one thousand men were held as *quasi* prisoners while at work there inclosed by a fence 15 ft. high. One man was shot while escaping from the stockade; six, however, effected their escape and reported to the United States District Attorney. An investigation will be made by the grand jury. Argo is fifteen miles from Chicago, and is said to be the property of the Corn Products Refining Co., who manufacture glucose on a vast scale.

### SUNFLOWERS FOR BEES AND CHICKENS.

It is true, as Mr. Crane states, sunflowers are heavy pullers on the fertility of the land on which they are grown. But many poultrymen are so situated they can secure very easily great quantities of manure, as they are near cities or towns. Sunflower seeds should not be compared in value with corn, oats, wheat, and other common grains. They take the place of beef scraps, and are safer to use; and, besides, they cost less. The reason why our turkeys "run out" is due very largely, I think, to the want of the very rich diet which they get in a wild state. The wild turkeys naturally get a large amount of insects and rich oily nut food.

They require food such as sunflower seed, and also hempseed, to make good the loss of their natural food when they are kept in a domestic state. Of course, in summer time they get many insects in roaming over a farm; but they still lack the rich nuts of their native woods in fall and winter, and it is here where the sunflower comes in. For chickens I would rather feed sunflower seed than meat meal.

### THE RECLAMATION SERVICE ATTACKED

That wonderfully able and excellent agricultural periodical, *The Country Gentleman*, of Albany, N. Y., has allowed itself the luxury of a tirade against the irrigation work now being executed by the United States government. It makes the grievous error of stating that the irrigation works are built at government expense, when it is a fact that the settlers bear all the expense, binding themselves to repay the cost in ten years. Furthermore, the funds which are being used as floating capital are obtained by the sale of public

lands, so that the government is not out a cent. In addition, the farmers who reside on these irrigation projects live under almost ideal conditions, both as regards remuneration for their work and also socially. If the New York farmers could devise a similar plan for making themselves comfortable, doubtless Uncle Sam would be glad to step in and do the work in the same thorough manner he has thus far executed his irrigation works in the West. *The Country Gentleman* asks for the repeal of the irrigation law; but that would hardly do the Eastern farmer any good.

The object of President Roosevelt's "uplift" commission is to devise some plan for improving the farmer's condition, and it is quite possible a way may be found. Possibly the Eastern farmer would find a cheap supply of electricity on the farm a great benefit. If so, currents could be distributed in the same way water is supplied in the West. It is easy to see that several motors could be very usefully employed on a farm of ordinary size.

### A BOOK ABOUT HONEY.

Mr. T. W. Cowan has supplied us with a book on the subject of beeswax. Now Dr. Alfred Hasterlik, of Munich, has undertaken to supply us with one on honey and its substitutes. Unfortunately it is written in the German language, and, though many Americans know that tongue fairly well, the most of us would prefer it in English. The title of the new book is *Der Bienenhonig und seine Ersatzmittel* (Honey and its Substitutes), and it goes quite extensively into the whole subject of honey and its adulteration.

It is published by A. Hartleben, of Vienna and Leipzig, who has issued quite a number of other books of a technical nature, many on chemistry, and, true to that mission, the present book is very strong on the chemical analysis of nectar and honey.

It also discusses the extraction of honey, and gives illustrations of the very latest designs in honey-extractors and honey-packages. The author has not hesitated to draw on the best American authorities, and shows illustrations of power-driven automatic honey-extractors. He also delves into the subjects of aroma, ripening, flavor, density, and other matters of importance where fine honey is desired. Adulteration is a leading subject, and the author seems to be well acquainted with all the tricks of the adulterator. There are a great many honey recipes, and he quotes freely from the pharmacopoeias of the leading European nations. Any one in quest of information relative to foreign drinks, vinegar, honey-bread and honey-cakes, will find this book a very good guide. Books of this kind deserve high praise, for the information given in them is not easily collated; but the author of this, being a doctor of chemistry, and a bee-keeper at the same time, we have the opportunity of profiting by his researches at very little expense.

The price of the book is 3 marks, in Germany, which is equivalent to 75 cents in our money and 3 shillings in English currency. For a book of 232 pages, packed with technical information, this is a very reasonable charge, and we hope the publisher will be liberally encouraged with orders.





APRICOTS DAMAGED BY BIRDS; FRUITS THUS INJURED ARE SUCKED DRY BY BEES, WHICH STORE THE JUICE AS HONEY.

### BEES VS. FRUIT.

**The Birds and Not the Bees are to Blame;  
the Latter Clean up what the  
Former Destroy.**

BY W. A. PRYAL.

The question, "Do bees destroy fruit?" has been pretty well answered in the negative long before this; still, there are some persons who to this day insist that bees are the guilty marauders. I have lived among fruits of various kinds all my life, and I must throw the weight of my testimony in favor of the bee.

The past season I watched with more than usual interest the destruction of the fruit of some Royal apricots that grew at one side of my apiary. Some of these trees furnished shade for many of the colonies. I found bees working on the fruit from morning until night. When fully ripe this fruit is luscious. There is, to my mind, no finer fruit than a fully ripe apricot, for it comes very near being as rich as the best grade of well-ripened honey, and the best of it is you can eat more of them than you can of honey.

In all my watching I was not able to find a single case where the damage to ripe fruit was started by the honey-gatherers. Many linnets were about, and they are a sore pest to the fruit-grower. In May they begin on cherries, which they slaughter badly at times, and they run through the gamut of tender-skinned fruits well into the fall. They usually choose the ripest and finest fruit for their prey. They seldom make more than half a meal of a poor or under-ripe fruit, but they simply dive head first, as it were, into the dead-ripe 'cots.

A fruit once opened by the birds is later set upon by the bees, and they keep up their toil until nothing is left but the skin and pit. And the bees might as well have such fruit, for once it is damaged by the birds it is useless for marketing. If it is not picked at once it begins to decay; and if not removed from an adjoining sound fruit,

which it may happen to touch, the neighboring one will rot too. Thus it is seen that in such a case the bees are a benefit to the orchardist. And here let me mention that the birds do not feast on a fruit more than a single day. They seem to want fresh fruit every time they begin a meal. From this it is evident that a large quantity of apricots is ruined.

Pears, peaches, figs, and a number of other fruits whose juices are sweet, are cleaned up by the bees when first punctured by birds. Some varieties of plums are liked by these insects, especially the French prunes. Juice of fruit of the plum kind soon ferments, and I have been told by Mr. W. E. Stewart, of Danville, Cal., that he has seen thousands of bees at a time as tipsy as lords from quaffing of alcoholic plum or prune juice. This, no doubt, was a case where they were too "full of prunes." The gentleman I mentioned also stated that he and others noticed some years that, where bees filled up on the juice mentioned, they died, possibly of chronic alcoholism—poor things! He said several years his hives became much depopulated through this means. In my apiary I never noticed bees under the influence of the "drink habit," possibly for the reason they had no chance to become full of prune juice, as we have but a single tree of the French prune, though we have many varieties of plums.

Bees are fond of grape juice. I never heard of their getting drunk on it. It is possible that this fruit does not ferment as rapidly as the more slightly acid fruits. Bees clean up grapes rapidly when they are injured by birds or when they rot or crack after early and unexpected rains.

The half-tone here shown is from a photograph I made in August, when flowers were scarce. The fruit had just been pecked by birds, and it is from such fruit that the bees lose no time in harvesting the nectar-like sweets.

Twelve years ago when on a visit to a commission house in San Francisco I was given a sample of a rich jelly-like article from a five-gal-



FIG. 1, *a*, *b*, *c*.—MOUTH PARTS OF THE QUEEN, DRONE, AND WORKER, MAGNIFIED 25.6 TIMES.



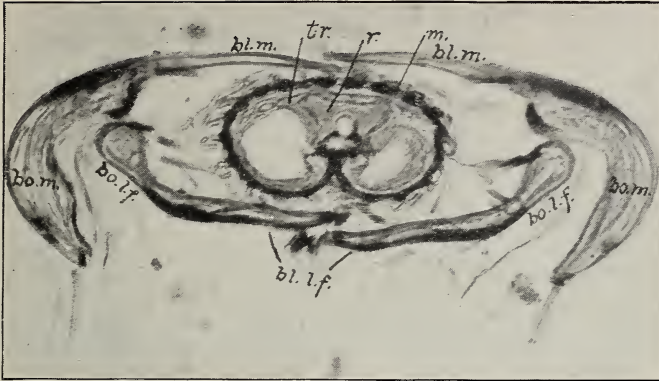


Fig. 2.—Transverse section of the mouth parts at the height of the first third of the lip-feeler; *tr.*, trachea; *r.*, rod; *m.*, mantle; *bl. m.*, blade of maxilla; *bo. m.*, body of maxilla; *bl. l. f.*, blade of lip-feeler; *bo. l. f.*, body of lip-feeler.

lon can. I was asked to taste it, and state how I liked it and what I thought it was. I remarked that it resembled apricot jam with a slight honey-flavor. I was then told that it was apricot "honey;" that it was gathered by bees up the Sacramento River, where apricots were being dried. I should think the bees got the best of those 'cots. In such a case it behooves the apirist to take his bees far off, or else for the orchardist to "kilo-dry" his fruit instead of sun-drying it, that bees might not swarm upon it and do too much damage by carrying off the juice. But seldom do we hear of any great injury of this sort.

Oakland, Cal.

## THE MOUTH OF THE HONEY-BEE.

### A Comparison Between the Corresponding Parts of the Queen, Drone, and Worker.

BY DR. BRUNNICH.

Every bee-keeper will be interested in a study of the mouth of the honey-bee; and without going much into detail I wish to show the differences in the parts of the mouth of the worker, queen, and drone. For clearly demonstrating those variations I magnified, by microphotography, the three different organs in the same proportion. Everybody can see that the development of the mouth of the worker is by far the most advanced. It will be well to explain briefly the more simple mouth parts of the worker; for to give an extensive explanation of the complicated parts would require the space of about two numbers of this journal, and would undoubtedly annoy and tire most of the readers.

In the middle we see the slender tongue, which, on account of the great number of minute parts, is very flexible, as we all have observed when watching a bee licking a drop of honey. The tongue of the bee is not a simple tube, but an intricate structure, as we see in a section through the tongue, lip-feeler, and maxilla (Fig. 2). In the midst of the tongue there is the elastic rod, giving the necessary firmness. Enveloping the rod is the mantle, whose free ends touch each

other, thus forming two channels on the sides of the rod. This mantle can be unfolded by the bee at will. The small spoon at the point of the tongue (Figs. 3 and 4) serves probably for *tasting*, and has certainly organs of taste.

On the under side of the tongue proper are the *lip-feelers*, which have feeling-bristles on the ends; on the upper side of the tongue are the *maxillæ*. The tongue, lip-feelers, and maxillæ may be shut like the blade of a knife, and are then imbedded in a corresponding cavity on the

under side of the head. There is a wonderful snapping mechanism like that on a knife, but this is very complicated, and difficult to explain. There are in the base of the tongue two springs, fixing the bent or stretched position of the three mouth-parts. One circumstance which complicates the mechanism is this: The tongue, when it is bent (Fig. 4), is folded together on its base. By this the tongue is shortened considerably, so that in the folded-up condition the ends of the tongue, lip-feelers, and maxillæ are exactly the same height. Thus the length of the tongue does not hinder other work of the bee (building, chewing, etc.). It is, indeed, a wonderful mechanism.

Formerly, when a queen or worker was fed by another worker, I often asked myself whether the act were a passive or an active one. That is to say, does the queen get the feed by having it "poured in," or must she suck the feed herself. I now know that the latter is the case. The feeding bee bends down its tongue and opens its throat, pressing out a drop of honey or chyle, and at the same time the queen sucks the drop with the stretched tongue.

Comparing the corresponding parts of the mouth of the three kinds of bees, we are struck by the poor development of the tongue of the queen and drone, as compared with that of

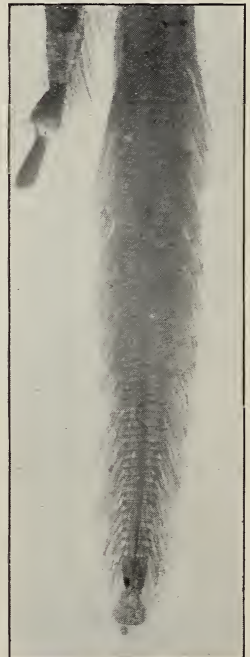


Fig. 3.—End of tongue of worker, magnified 70 times.

the worker. The *free* portion of the tongue of the worker is 2.75 mm; of the drone, 1.6 mm, and of the queen only 1 mm. Also the lip-feelers and maxillæ of the worker are considerably longer than those of the queen and drone—about double the length of those of the queen.

Summing up we can say that the parts of the mouth of the worker are much more highly developed than those of the queen and drone, forming a strange contrast to the difference in the size and strength of the breast, legs, and wings of the three kinds of bees. However, we must admit that the perfection of the worker mouth is in full harmony with its function. We know that the bee is enabled, by the length of its tongue, to reach the nectaries of certain flowers, while neither the queen nor drone ever gathers honey, being nourished by the workers or else from the full cells in the hive.

Let us still compare the upper jaw (mandible) of the three bees. Here the differences are still more distinct, especially as to the form of those parts. We admire the powerful upper jaw of the queen (Fig. 5, A), which resembles the form of the strong sawed mandible of the wasp or hornet, and which is not to be despised as a weapon. Both upper jaws form together a good pair of scissors, well adapted to the work of cutting the strong cocoon of their cells—a work which the worker-bees are generally unable to perform. With the point she penetrates the cocoon and continues with both upper jaws to shear it; I have often watched a queen at this work, and wondered, when I saw how quickly and neatly the young thing made its circular cut, turning itself about meanwhile. The cutting is so sharp that one must look very closely to discover it. I remember an experience I had years ago. A friend who had had an after-swarm gave me a number of queen-cells, each in

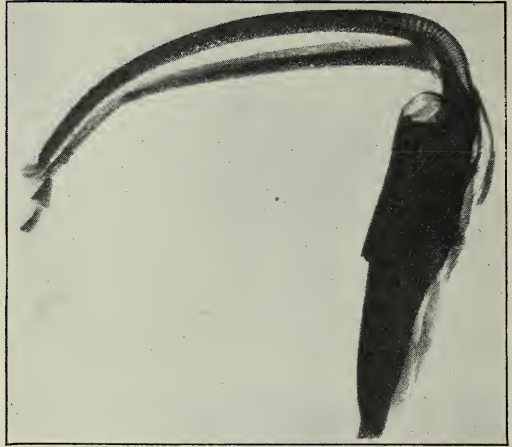


FIG. 4.—TONGUE AND LIP-FEELER BENT TOGETHER; MAGNIFIED 30 TIMES.

a match-box; and when I reached home I was astonished to see that some of the cells contained no queen, though the top of the cell was well cut circularly. It was quite an enigma for me, because I did not yet know that the little cover often shuts itself after the queen has gone out.

On the base of the upper jaw we see a smooth round projection; this is the spherical condyle, which moves in a corresponding cavity in the head, thus forming a joint which allows movements of the upper jaw in different directions.

The upper jaw of the drone (Fig. 5, B) differs somewhat from that of the queen. It is not shorter, but sligher, and therefore a less powerful weapon. However, according to Pratt's observations it seems that rival drones often combat each other grimly enough. Like the queen, the

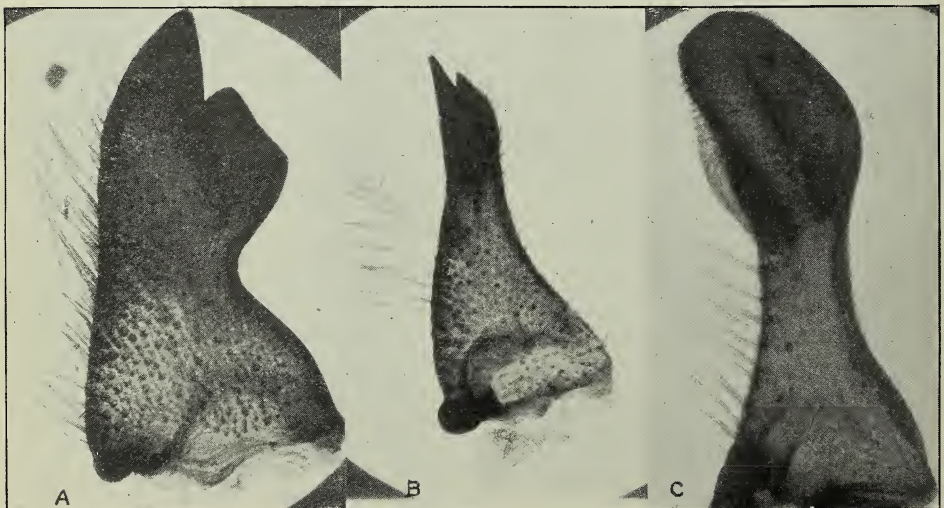


FIG. 5.—UPPER JAW:(MANDIBLE) OF QUEEN, DRONE, AND WORKER, MAGNIFIED 51.7 TIMES.



drone uses its upper jaws as scissors in making a circular cut at the top of its cocoon (which is not quite as tough as the queen's). Every bee-keeper, early in the morning in May and June, has seen on the flight-board a number of those round little cappings when many drones have slipped out the night before. The hairs on the upper jaw of the drone are longer and lighter than those on the queen and worker.

The upper jaw of the worker (Fig. 5, C, and Fig. 6) is so different that one would think that it belongs to another insect. It is a tool shaped like a shovel, not of much use as a weapon, but constructed for various purposes. For instance, the upper jaws are used for comb-building, for removing pollen from cells, and perhaps for packing it in, as well, and for gnawing, etc. By means of them the worker opens its cocoon, not by shearing it, but by slowly tearing it to pieces. The jaws take the place of hands, for with them the bees carry out of the hive pieces of wax, crystals of sugar, dead bees, wax-worms, and all foreign particles; and with them the workers seize robbers, pull at the wings of strange queens, and battle with the defenseless drones.

Considering the organs of the mouth of the three kinds of bees, we may admit that the tongue and accessories, as well as the upper jaws of the drone and queen, belong to a lower stage of development; and it is most interesting to see that those parts of the worker-bee have been improving, while the same parts have been stable in the drone and queen. Only the worker needs re-fined tools, and therefore only the worker has them. Evidently the mouth parts of the queen and drone are primitive forms, and those of the worker have improved from age to age.

The contrary takes place with the wings of the ants. Doubtless the workers also possessed wings at one time; but after a while the wing became superfluous, and even hindered, so that they finally disappeared.

Ottenbach, Switzerland.

## FEEDING SYRUP IN COLD WEATHER UNDER THE CLUSTER.

### Bees Carrying Honey into the Upper Story.

BY FRANK C. PELLETT.

The proper time to feed is in the fall, before the weather gets cold; but it sometimes happens that one must feed colonies purchased late in order to save them, or for other reasons. I prefer an empty super with a pan of syrup covered over with a light cloth to any of the feeders on the market for use at any season of the year, for, when placed over the bees, there is less danger from



FIG. 6.—HEAD OF WORKER, SHOWING UPPER JAWS OR MANDIBLES, MAGNIFIED 22 TIMES.

robbing than from an entrance-feeder. For cold-weather feeding we simply reverse the thing and set the empty super, in which is placed the pan of syrup, under the hive. With this plan the hive may be covered with the usual tar-paper covering. Of course, this plan or any other, for that matter, will not work in extremely cold weather; but in this latitude we get warm days occasionally throughout the winter, in which the bees may be fed if the syrup is ready, so that they need not be lost for want of stores. The advantage of this plan over the overhead method is that the cluster will form over the pan and the bees will hang right down to the cloth cover and take the syrup when it is much too cold for them to break the cluster and go upstairs after it. I have had the bees take syrup in this manner when it was too cold for them to fly. I think that much less heat is lost by lifting the hive off the bottom-board and placing over a super as above described than from any other way. The lifting of the cover in winter is especially bad, as the heat naturally rises to the top.

Perhaps a little unusual experience that we had in uniting this fall may be of interest. We had a swarm that was rather light, so we decided to strengthen it by adding more bees. A neighbor offered us his bees, from which he wished to take the honey, if we would take the job. His bees were in a chaff hive in which we wished to winter them, so we took an ordinary eight-frame hive full of empty combs in which to drive the others. We paid no attention to the queen, as there was no difference in the two so far as we knew, so we left the choice to the bees. On bringing them

home we placed them over the hive in which we wished them to winter, as we had always done before, expecting, of course, that they would unite with the colony below on the combs of sealed stores. All our experience indicated that they would go down, and all we have read of uniting by this method has been to the point that the two colonies will unite in the lower hive. In this case there seemed to be nothing else to do, as the lower hive contained the honey while this contained empty combs. I looked at them frequently, expecting to find the upper hive deserted and remove it; but, not finding it so, I decided to look below, and, to my surprise, I found that the bees had carried all the honey above, and the two colonies had united in the upper hive, leaving the lower one empty. As it was too late to transfer the frame we must now winter in the single-walled hive.

Perhaps such experiences are not uncommon, although I had not noticed such an occurrence before. I should like to know whether or not it does frequently happen that the colonies unite above, especially when the honey is below, as in this case. It seems to me that the stronger queen must have been present in the upper hive, and this must have been the determining factor in the case.

Atlantic, Iowa, Dec. 15.

[As a general rule, when two colonies of equal strength are put one on top of the other, the two forces will unite in the upper hive on account of the greater warmth; but if the lower hive has a lot of brood, and the upper one none, the bees will probably all occupy the bottom section.

We may lay it down as another rule, that, where two colonies, one a weak one and the other a strong one, are put together, one on top of the other, the weak one will go with the strong, whether it be above or below. In the case you have cited, the colony in the lower hive was weaker than the other; and the fact that, other things being equal, a lower lot of bees will unite with the upper one, would easily explain why both forces occupied the upper hive.

The tin pan and the piece of wet cheese-cloth make a most excellent feeder; but the cloth should be large enough to spread clear down over the edges of the pan, reaching to the brood-frames to afford a sort of ladderway to and from the feeder. If the cloth is just large enough to cover the surface of the syrup, the bees will have some difficulty in climbing up a sloping surface of the pan, although they will do it after a fashion.—Ed.]

## FANCY HONEY FROM BOX HIVES.

### Four Swarms Clustered Together.

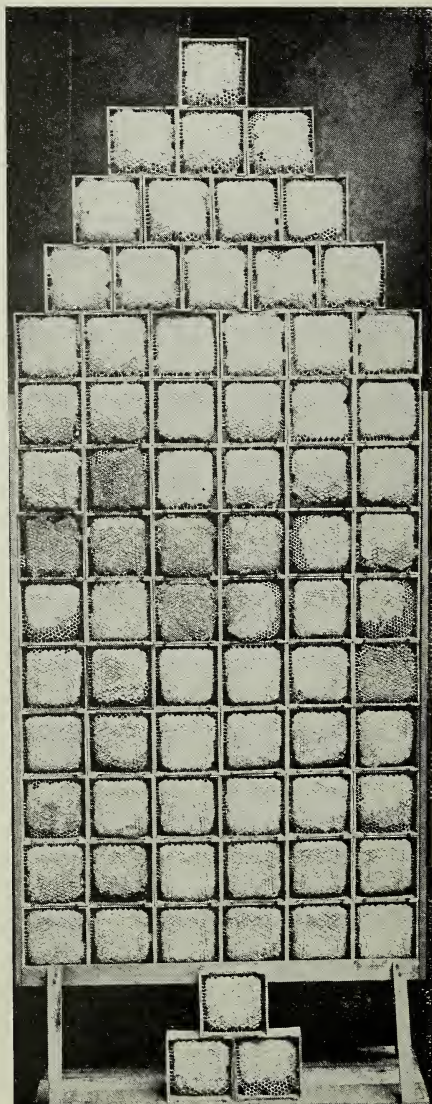
BY J. W. SPICKLER.

About the 20th of May an extra-large swarm issued from one of my hives and clustered in a cherry-tree in the yard. Before the bees were fairly settled a swarm came out of another hive and clustered with the first one. Then a third and fourth came out and all went together, making one mammoth cluster. I did not care to separate them, and so I dumped them into a dry-goods box. Later I took them out of the box and put them in a smaller one, 24 inches long, 23

inches wide and 5 inches deep. I used 15 pieces of lath instead of frames, with a quarter-inch starter of foundation on each one. Right after this I put on a super containing 55 sections, and these were filled, as shown in the engraving, in about thirty days. I put on another super containing 40 sections, but only 21 of these were filled when the honey-flow ceased.

This big colony in a box is in good shape for winter at the present time. I did not kill any of the queens when I hived the bees. There is from eighty to one hundred pounds of honey in the hive now for winter stores.

Columbiana, Ohio.



COMB HONEY PRODUCED BY A COLONY IN A BOX HIVE.



## COMB HONEY VS. EXTRACTED.

**Amount of Honey Consumed by the Bees in Building New Combs not Important in the Discussion; Wax Secreted Involuntarily; Extracted Honey More Profitable for Slow Flows; Wax Produced for Market.**

BY R. C. AIKIN.

*Continued from last issue, page 24.*

Almost every one knows that, during slow flows especially, if a few sections are put into a super as baits it is a great inducement for a small cluster of bees to gather on them; and the bees in that cluster soon deposit some nectar in the empty drawn combs of such sections, and after this the greater force of the bees below follow, so that work in the super is started in earnest if there is any honey-flow to justify it. It is, therefore, unquestionably true that extracting-combs have the advantage in getting work started more promptly.

This is a problem that taxes the skill of the apiarist. If the colonies are weak, or if the flow is light, the bees will not promptly enter comb-honey supers. A brood-nest clogged with honey will not only curtail the amount of brood, but will encourage swarming, sulking, and loafing. Many plans have been proposed in order to force the bees into the supers, the chief one being to have the colonies so populous that the workers must go into the supers or else get outside the hive; and if they loaf or cluster in the supers they are almost certain to work there if stores are being gathered.

Now, suppose the apiarist knows his business well enough to get the bees started in the comb-honey supers as promptly as in extracted-honey supers; why should there be any more extracted honey produced than comb honey, granting that the wax secretion and comb-building principles, mentioned in the first article, are true? With ordinary skill and management there will be a *small* gain in favor of the extracted honey. On the other hand, if the apiarist allows swarming, or if he divides too much, or allows weak colonies to be run for surplus, there will be a more marked difference in favor of the extracted honey. In other words, if the man handling the bees is not their master—if he runs them on the hit-or-miss plan, and allows them practically to manage themselves while he simply puts on and takes off supers, then by all means he should aim to produce either extracted or bulk comb honey.

### THE COMPARATIVE RESULTS IN HONEY.

When plenty of storage-combs are placed above a colony, and the storing in them is once started, it often happens that almost all the honey goes into these combs. A small brood-chamber, a strong laying queen, or both together, will most surely result in the honey being placed above and all the brood below. This is an ideal condition if a late flow follows; but if practically all the honey comes from one flow, and a dearth follows, then, when there is such a mass of brood below and the honey above taken off and sold, feeding must be resorted to or the bees will starve before the next spring. We may say in general, therefore, that, where the amount of extracted honey

produced is much in excess of the possible amount of comb honey, the foregoing is the result. I have destroyed hundreds of colonies in just this way, and in the end was the loser because I paid most dearly for the extra number of pounds of honey sold.

Divide an apiary into two parts as nearly alike as possible, and run them side by side—one for extracted and the other for comb, giving each the same care in every respect throughout the year. Keep strict account of the number of pounds of surplus, and then invoice at the end of the full year—that is, just before the beginning of the next honey-flow; or at the close of the honey-harvest weigh the surplus from each and the amount of stores remaining. It will be found that the extracted-honey colonies are the lighter in stores and the heavier in brood. This extra amount of brood without a later honey-flow will mean that the queens will be worn out, and the colonies will not winter well unless fed.

If the apiarist desires to obtain the most surplus with the least expenditure for skill and care he had better run his bees for extracted or bulk comb honey. Furthermore, during the seasons when the honey-flow is very light the extracted honey can be obtained when it would be impossible to obtain a surplus of comb honey, and if any at all were obtained it would be of an off grade unless the greatest care were exercised. My judgment is that, all things considered, there can be but little more extracted honey produced than comb when the bees are left with sufficient stores, and the proportion between the two becomes more nearly equal as the skill of the apiarist increases.

The first and main thing to be considered is the relative cost of production; for when we have the cost price we can tell for ourselves which kind we ought to produce by comparing this cost price with our selling prices. Then it is well for every bee-keeper to experiment with both, for it is true that one person may fail producing one kind of honey while the next fails in producing the other kind. It is also true that local conditions make a decided difference. Let me illustrate this point by mentioning some of the conditions as I have found them.

### HOW LOCAL CONDITIONS AFFECT THE PROBLEM.

When I first came to this locality, eighteen or twenty years ago, we obtained almost the whole product of both surplus and winter stores from one alfalfa-honey flow beginning about June 15th and lasting from four to six and sometimes even eight weeks. Under these conditions we had to make a strenuous effort to get all the colonies in the very best shape possible for this flow, and then the bees had the rest of the summer to get themselves ready for winter. In those days, if I could start the bees to working promptly in the supers, and keep them from sulking, there was but little difference in the results in the comparative yields in colonies run for either comb or extracted honey, although this difference, such as it was, was in favor of the extracted-honey colonies.

This, however, is now changed. In the good old days alfalfa hay was cheap, and many of the fields were allowed to stand in full bloom for two or three weeks. There were but few bees in the country to work on it, and large yields were obtained. Now the farmer watches his alfalfa, and usually cuts it when the first bloom appears, and

this greatly reduces the season of bloom. In addition to this there are many more bees in the country. While these changes have been taking place, a demand for a finer honey has sprung up. Sweet clover has also increased, practically changing the season of flow from June and July to July and August. The alfalfa rarely fails to give *some* honey in June and July, perhaps just filling the brood-chamber, making possible, sometimes, work in the supers, but usually the flow during June and July is slow and of such a nature that the brood-chambers become badly clogged with honey, and it takes the utmost care with strong colonies to get any satisfactory work in comb-honey supers, and at the same time the rearing of brood is curtailed that should give the proper force of bees for the sweet-clover flow, which is the greatest from August 1st to the 20th. We therefore have to scheme and strain every nerve to get the supers finished which were started, perhaps, in June and not completed before August. When the flows are so slow and intermittent, the apiarist has to be an expert to make a success of comb-honey production under conditions when the total yield does not average over two supers per colony in the whole two months. Then with all the other troubles the swarming problem has to be met in comb-honey production.

I like to produce comb honey for various reasons, especially because it is quickly marketed, and the quicker the honey is marketed the better; but with these long slow flows, and after weeks and weeks of vigilance and care, it is rather discouraging to find great piles of sections either not used at all or only partly filled. There seems to be at all times sufficient wax secretion, and bees enough to do the building of all the comb necessary to receive the honey gathered. Under these conditions I have for several years contemplated producing extracted honey; and not only that, but to let each colony build new comb each year, save one or two bait-combs to entice the bees into the supers, and then make wax of all surplus combs.

#### THE COMPARATIVE COST OF COMB AND EXTRACTED HONEY.

It requires as a first outlay a little larger investment for the extracted-honey equipment; but this equipment is permanent, and does not have to be renewed every year. In comb-honey production the work piles up all at once, and can not be neglected. An extracting-super may be left on the hive indefinitely, and it may be only partially filled or clear full, while the comb-honey supers, on the other hand, must be carefully looked after or there will be a great many unfinished sections to melt in making the expensive *strained* honey.

I believe there is but little difference in removing the two kinds of honey. It costs about as much to scrape and case comb honey as to render, extract, and pack extracted honey. The extracting-supers themselves are perhaps a little less expensive than comb-honey supers; but both are permanent investments, and nearly balance. However, when I count the sections to be bought for each crop as well as the foundation, etc., there is a cost of at least one cent a pound on comb honey that does not have to be figured on extracted honey. Final packages for each approximate about the same value.

There is more than this to consider, however. Extracted honey should never be produced unless it is largely capped, and the wax from the cap-pings will just about pay for the expense of extracting. Several years ago I had some estimates on this point, but have forgotten the details, as I have so little to extract of late. Any way, the amount of wax obtained varies, depending on how much the combs are bulged and on the amount of burr-combs. It must be remembered that beeswax runs into money fast, and needs no expensive packages, and is not nearly so perishable as honey.

Now, suppose we melt three out of four extracting-combs, retaining the fourth for a bait-comb. On the basis of 4 lbs. of wax to hold 100 lbs. of honey, and with wax at 25 cts. per lb., we have the proportion of 75 cents' worth of wax to the 100 lbs. of honey. I think that extracted honey, and the cost of labor of producing, and packages up to the time it is ready for shipment, costs fully 2 cts. per lb. less than comb honey. In addition to the cost, the management necessary for extracted honey is easier, and less skill is needed, and the honey when gathered is less likely to be injured, can be kept indefinitely, and may be shipped more safely. If so desired, the extracting may be left to any convenient time after the harvest is over.

I have mentioned the fact that the first equipment for extracted honey is greater than for comb, but it is serviceable for years. With comb-honey production one must put money into sections and foundation every year without knowing whether there will be any use for them; but with extracted-honey production there is no need of spending a cent for cans, etc., until the honey is actually in sight. Furthermore, because of the greater ease in controlling swarming, and the less amount of attention given to the details of management during the season, one can handle a greater number of extracted-honey colonies, and thereby materially augment his gross earnings, at least in the number of pounds produced. In localities where honey does not candy rapidly, it is not necessary to extract until some time during the late fall or winter, thus giving the whole time to producing through the summer, and leaving profitable work for the winter.

I wish to call attention again to the fact that wax is very valuable, and that much of it can be produced when colonies are run for extracted honey. Great quantities of wax are lost each season if the bees are not allowed to use it in building comb. The bees use it for other purposes if there is no comb to build. When scraping sections I save the scrapings, which appear to be almost entirely propolis; but when melted they yield considerable wax. Then I have many times seen nice white wax used to fill cracks about comb-honey supers; and when there are full sets of combs already built to hold every drop of honey to be stored, I have found workers loaded with wax scales, cracks stopped with wax, burr-combs put here and there without stint, and, when not needed, bits of wax built against the quilts over the top-bars, sometimes amounting to a quarter or even half a pound—all this apparently done just to get rid of the surplus wax by using it where propolis would ordinarily be used. If the colony clusters outside the hive the bees will



put little knots of wax even on the hive-walls. So far I have said nothing about wax scales that may be dropped. We can not see these, because the bees of a strong colony will not leave any sort of chip of wax or any thing else where we are likely to see it. I think that burr and brace combs are the richest in wax of any thing we get wax from, and they are evidently built, at least partly, to get rid of the surplus.

I know that I am going contrary to popular opinion, but I have simply told the results of my experience and observation. Ready-made combs, during a rush of honey which comes on suddenly, are valuable, but otherwise they should be used only as baits.

In producing extracted honey I should use a brood-chamber of ten or twelve frames instead of an eight-frame brood-chamber when running for comb honey, in order to prevent robbing of the stores.

Loveland, Col.

[Our correspondent has struck on a very important topic, and one that should merit not only careful thought but extended discussion. It involves the problem of the production of wax for market. It has been generally assumed that the bee-keeper outside of the tropics can not afford to produce wax in place of honey; but as editor of GLEANINGS we see in our general correspondence a tendency toward the feasibility of producing wax for market instead of honey alone. It is one of those questions that will not down; and *if* wax is produced involuntarily, and *if* in the production of comb honey a large amount of natural wax is lost, then producers should stop and think.

You will notice in the foregoing that we have put the two *if*s in italics, for we would not at this time go so far as to make the positive statement that wax is produced involuntarily, whether it be used in comb-building or not; but we are anxious to get hold of additional data that may have some bearing on this question.

If we mistake not, the Apicultural Expert, Dr. E. F. Phillips, in the Division of Entomology, Washington, D. C., has been giving this matter some attention. If so, some bulletin will doubtless have some important data that will mean much to bee keepers.—Ed.]

## MOVING BEES SHORT DISTANCES.

### Does it Pay to Move Colonies Two or Three Miles and then Back Again to a Desired Location?

BY CAREY W. REES.

It is necessary for me to move an apiary about 40 rods; and as we are not likely to have cold weather here to keep the bees in the hives more than a few days at a time, I have been at a loss to know just how to proceed.

Some time ago it was so cold that the bees were not flying, and I moved ten hives. The next day was cold, and only a few bees flew; but some that did fly returned to the old location, and after a short time entered hives near by without loss by fighting. The weather continued like this for three days, and then came a warm day, and the bees flew as in summer time. More bees return-

ed than before, and entered other hives; but as I did not think those were much loss, or not enough to warrant me in moving the bees two or three miles, and allowing them to stay for two or three weeks, and then move them to where I want them, I concluded to try the plan again, which I did when the weather was warm and many bees were flying; but I don't think that any more bees came back than before, and nearly all returned that did come within a few hours, as nearly as I could tell.

To-day I moved ten more hives, and let the bees remain shut in until noon, then opened and left them fly; but I smoked these last ones well a number of times. I do not know whether any of these returned. If so, it was only a few. This was a very warm day, and the bees were flying as in summer time and carrying in pollen. I do not know if they are getting any honey or not; but a neighbor told me a few days ago that his bees were getting a little honey. He said that he caught some of them and found sweet nectar in their honey-sacs.

How can any one tell to a certainty that fewer bees are lost when moved two or three miles than when moved a quarter of a mile, as the ones that are lost in the field are not seen? What means have we of knowing? Since they must be familiar with all the territory within a radius of two or three miles, isn't it reasonable that they could as easily return that distance as a quarter of a mile?

Lytle, Texas, Dec. 15.

[Hives of bees can be moved at any time of the year; but where they are moved less than half a mile there is sure to be more or less returning of the old bees. In the fall, after cold weather has set in, there will be much less of this returning than during the early part of autumn when the weather is warm. In your case, or in any locality where it is likely to turn warm every few days, we would advise putting the bees to be moved down cellar during the coldest part of the winter, and keeping them there about six weeks. They can then be placed in any spot desired.

You ask how it can be known that bees will return when moved a short distance, more than when moved a long one. Very easily by weighing up the colony. As bees do not ordinarily fly more than one and a half or two miles, if they be put in an entirely new location they will remark their new home by taking note of every thing in the vicinity. If we move baby nuclei, containing only five or six hundred bees, two miles or more they will hold their strength after being moved; but if they be carried only a short distance, these little boxes will be more than likely to be pretty well deserted in twenty-four hours unless these little clusters are formed of several lots of bees mixed together.

As a general thing, bees are not familiar with territory more than a mile and a half distant at the most. Probably a mile will cover 95 per cent of their range of flight.—Ed.]

## THE ALEXANDER PLAN INDORSED IN ENGLAND.

I have found that Alexander's method of strengthening weak colonies by placing them over strong ones answers very well.

Bedford, Eng., June 3.

F. W. MOORE.

# HEADS OF GRAIN

## FROM DIFFERENT FIELDS

### COMB-HONEY GRADING-RULES; A CRITICISM.

I wish to take exceptions to the editor's note on page 1316, Nov. 1, in reply to the article by J. C. Davis on grading comb honey.

We have been trying to educate our brother bee-keepers so we might improve our grades in comb honey. The illustration is marked "properly graded honey." In the first place, no illustration should ever be published showing as much unsealed honey in any grade.

In the second place, I fail to see where the illustrations fit even the Eastern grading-rules, and I claim that such cuts are misleading to amateur bee-keepers.

For several years I have had trouble with bee-keepers who have shipped honey with me in car lots, who tried to grade their honey by the rules published in GLEANINGS. We western bee-keepers believe that the fewer grades we have the better, as long as all the honey is covered properly. As the editor says, we get so small a percentage of so-called "fancy" honey that we have no use for the fancy grade. At the last annual meeting of the Colorado State Bee-keepers' Association we revised our grading-rules, and included another grade called No. 1, light amber. Our rules in regard to this require the same weight, proper capings, etc., as is required in No. 1 white. In fact, it is No. 1 honey in every way except that it is slightly off color. We believe that no honey should be placed in the regular grades that has, besides the outside row, more than 25 unsealed cells.

N. L. HENTHORPE,

*Sec. Colorado State Bee-keepers' Association.*

Platteville, Colo., Nov. 23.

[If the reader will turn to the Colorado grading-rules published occasionally at the head of our Honey Column elsewhere he will understand better the arguments of our correspondent.—Ed.]

### ALEXANDER'S BEES DO NOT REACH ALL THE BUCKWHEAT IN THE LOCALITY; THE MATTER OF OVERSTOCKING IN A BUCKWHEAT COUNTRY.

I think Mr. Orton's ideas, page 1504, Dec. 15, are entirely correct in regard to the amount of buckwheat reached by Mr. Alexander's bees being greatly overestimated. I'm something of a walker, and during my spare time in the two seasons I worked for Mr. E. W. Alexander I traveled the roads in every direction around Delanson. I think not a tenth of the land in reach of his bees was ever sowed to buckwheat in one season, and most of this was of the poorer Japanese sort.

I believe that the number of colonies that can be kept in one locality has been greatly underestimated. I now have about 150 colonies here; and around me within a four-mile circle are more than 1200 colonies belonging to my neighbors. In spite of this, I got more honey per colony than did any of my neighbors that I know of, and some of them had twice the amount of buckwheat and not a quarter of the bees. I even beat the Alexanders a little, though their big yard ten miles away by road was second.

Mr. Orton was wrong about the Alexander honey-tanks, as each tank holds only *two* tons or about eight tons in all. They are hardly large enough, as it takes a two-ton tank to ripen the honey properly from 150 extracting-supers in a good honey-flow. R. V. Cox.

Slansville, N. Y., Dec. 21.

[When we visited Mr. Alexander, some years ago, he said he had found some of his bees, which he traced by the line of flight back home, in buckwheat-fields three and even five miles away from his home. Ordinarily bees do not fly that far; but he said that, in a hilly country such as he had, they would fly further across valleys than over level country or through woods and underbrush. It was not difficult for us to understand why 150 colonies could be supported in one apiary, when Mr. Alexander offered this explanation.

We remember also how Mr. Alexander pointed out fields that were some three miles away, and some even five miles. As his apiary was located on a hill, the bees, if they have long distance vision (and he thought they had), could see these white patches, and naturally go to them as fast as the nectar supply in nearby fields was taken up.

Then another fact that he gave us was that his bees undoubtedly gathered a very large part of the honey from asters, which were in bloom about the same time.—Ed.]

### HOW DID THE QUEEN GET IN THE OTHER HIVE?

Wishing to add more rapidly to my small apiary I bought two colonies of bees June 18th. One of them did not increase, and upon examination I found that the bees had four combs drawn out, but no signs of queen or brood. I waited two days and went through the hive again very carefully, but could find no signs of a queen; but there was a capped queen-cell on one of the combs; and, being curious to see the inside, I clipped the end of the cell off but there was no larva inside. The queen-cell was surrounded by about fifteen drone-cells containing larvæ, which I would think indicated a laying worker, although there were no eggs nor larvæ in any of the worker-cells.

I cut out these cells and introduced a queen in the usual way, leaving her in the cage three days before releasing her. The minute she crawled among them they balled her. I put her back in the cage and tacked a thin piece of pasteboard over the hole in the cage, but at the end of two days they had released her and killed her.

I gave them a frame of brood from another hive, but they refused to raise a queen. I then gave them three capped queen-cells from another hive, but they immediately cut them out.

In August I had a very large swarm come off another hive, and after having it I placed it by the side of the queenless hive that had been tearing down the cells, intending to unite them in a few days. Three days after, I proceeded to unite the two colonies; but when I opened the queenless hive I was surprised to find just a small handful of bees with a queen, also a number of the brood-cells containing eggs.

I immediately closed the hive and carefully went through the swarm that had been placed



next to it, but could not find the queen. I then took the brood-frames out of the hive containing the queen and handful of bees and placed them with the swarm, and you never saw a more contented lot of bees, not one of them offering to fight.

1. Why did the queenless colony accept the queen from the swarm when she crossed over (which she evidently did)?

2. Why did she go to that hive? Was it to use the brood-frames drawn out by the queenless colony?

3. Why did the bees in the queenless colony go to the new swarm except the handful that stayed with the queen? WILLIS N. ZEITLER.

Punxsutaney, Pa., Dec. 4.

[The probabilities are that the first hive to which you refer contained laying workers; at all events, the behavior of the bees toward the queen and queen-cells that you gave them is quite in line with what such a colony might do, although as a rule it will accept cells. The swarm that you put beside the laying-worker colony was probably much stronger numerically; and such being the case it would absorb the bees from the weaker colony. When two colonies are set side by side, it generally happens that the stronger will draw from the weaker. The former will make the bigger demonstration in front of the entrance. The mass of bees in the air has a tendency to go to the colony where there is the strongest flying. In the case under consideration it is not at all strange that the laying-worker colony became weaker and weaker.

It is not easy to account for the fact that the queen of the swarm should desert her old colony and go into the other. It may have happened somewhat in this way: The swarm, after you placed it beside the other, came out unknown to you, and returned. But the queen, by mistake, went into the wrong hive, that is, went with the laying workers. If their hive at the time was very largely depleted in force, the remaining bees would probably accept any thing in the shape of a queen; for it is much easier to introduce to a weak stock than to a strong one. Again, it is true that a colony will sometimes refuse to accept a caged queen, but will take one that goes into the hive by mistake. Why this is so, we can not explain. Colonies are like persons. Some of them have queer freaks, and will at times do any thing contrary to all rules and precedents.

Your questions we have already answered in our general statement.—Ed.]

#### NO DANGER IN GROUPING COLONIES CLOSE TOGETHER FOR WINTER.

On page 1427, Dec. 1, a correspondent of Mr. Doolittle proposes to winter a number of colonies together, with the hives set so close that they touch each other, except the entrance part, which will face outward, packing underneath, on top, and all around the whole with chaff or carpet, so that the heat of the whole will keep all warm and at an even temperature.

This is an economical way to get all the advantages of double hives, as I assume, from the entrances facing outward, that they are to be left open for the winter. The heat from adjoining colonies would hardly affect any seriously, as I

have placed my hand under the top cushions of several hives in freezing weather, and found it hard to locate the cluster by the warmth; and even if a colony gave out much heat, the experiments of Mr. Geo. W. Phillips, which appeared in GLEANINGS some time ago, would show that a colony can be entirely surrounded by a temperature of 70° and winter successfully, when the entrance is open, thus giving good ventilation.

A windbreak would be a necessity, though, on all sides but the south, in this locality. By placing the hives in two rows a few feet from the south side of some building, one row facing the north, back to back with one facing the south, the use of windbreaks might be avoided. It might be a good plan to place a half-story or super with chaff or cushion in it on each hive, then place the next tier. The confusion of the bees when their location is changed in fall and spring is the greatest difficulty to be overcome and determine as to whether the plan is practicable or not.

Elyria, O., Dec. 19.

W. J. MILLER.

[The greatest objection to this grouping plan is the confusion when the hives are placed on their summer stands. In spite of this there are some prominent bee-keepers who winter this way. The heat of the cluster in cold weather is not very pronounced.—Ed.]

#### HOW MUCH DOES A DEALER MAKE ON HONEY?

I should be pleased to have you give me some idea of how much a merchant generally makes on a section of honey. If a section is retailed at 20 or 25 cts., what would be a fair price for a bee-keeper to receive? There is so small an amount of honey raised here that we know little about it at home. The honey shipped in is not liked because of the condition it arrives in, and there is not much shipped in any way. I always get a good price for my honey, but have taken different prices, as some merchants, before knowing the quality of the honey, pay less than others.

Farris, Wash.

MISS ANITA A. BYERS.

[Some years ago it was figured out at a convention that honey sent to the city on commission, and selling at 15 cts. per lb., would net the producer only 10 cts. The 5 cts. was supposed to cover freight, drayage, leakage, and commission at 10 per cent. If the dealer or the one who sells to the consumer pays 15 cts. he will sell that same honey for not less than 18 cts., and he may get 25. Much will depend on the market, and whether the dealer has a fancy trade or an ordinary country trade.

Where a producer can sell locally we advise him not to send honey to the city, but take it around to his own grocers. From these people he can get 15 cts., if he can get any thing, providing the honey is No. 1 or fancy. If it is a country store, such honey will sell to the consumer for 18 or 20 cents.—Ed.]

#### A TARIFF ON HONEY AND WAX NOT FAVORED.

I am sorry that the Detroit convention recommended a higher tariff without a general discussion of the question, because there is at present a tendency to recede rather than to advance from the extreme stand generally held in this country. Judging from effects in general, the almost cer-

tain advance to consumers of wax and honey and products of which they are a part, the adjustment to new conditions which the change in rates implies, and the doubtful utility of the tariff itself to accomplish the desired results, I would most respectfully record my vote against any raise in rates.

Those who advocate a higher tariff ostensibly for the purpose of excluding diseased honey and wax are open to suspicion, inasmuch as the exclusion of unwholesome and dangerous substances may easily be controlled in our imports without a tariff; and, like beneficiaries of tariff in general, they wish to conceal their intentions under the cloak of public welfare. They keep our eyes on the dangerous germs of foul brood while they quietly abstract from the public 5 cts. on wax and 2 on honey, and this, too, while we are trying to get the people to consider our honey a desirable, cheap, and wholesome food.

Ann Arbor, Mich., Dec. 3. E. G. MANN.

#### MEETING OF THE CHICAGO NORTHWESTERN BEE-KEEPERS' ASSOCIATION.

An exceedingly interesting meeting of the Northwestern Bee-keepers' Association was held at the Briggs House parlors, Chicago, Dec 2 and 3. This association represents territory in Indiana, Illinois, Wisconsin, and Iowa. It was largely attended by the bee-keepers of Cook Co., of which there are upward of a thousand in the county and three hundred inside the city limits of Chicago.

On the subject of the control of the price of honey, many deprecated the practice of selling the crops at whatever price might be offered. One man told of the sale to a Wisconsin grocer of a large amount of the finest kind of white-clover honey for 10 cts. a pound. The plan of communities of bee-keepers organizing to control prices in their vicinity was advocated. One bee-keeper told how he and two others had made and kept an understanding as to prices, and how each, year after year, had disposed of the crops without any undue sacrifice. Another member told of the sale of 50,000 lbs. of honey in one town. There had been a distribution of not less than 2 lbs. per capita at fair prices.

Mr. Whitney, of Evanston, said that there never would be any great improvement in this matter until the bee-keepers of the country are brought into the associations, induced to attend the meetings, and constantly take and read a bee-paper, so that they may be enlightened as to profit-making in the industry. Ignorance was thought to be at the very root of such matters, and this ignorance must be cleared away by the work of the men and women who are working members of associations and readers of bee literature. The crying need is to get the apiarists, or, rather, men and women who are bungling the business, to get into the bee-keepers' fold.

The meeting voted, through a resolution, to ask the legislature of Illinois to pass a law to govern the conduct of apiaries to the end that dreaded disease may be prevented, cured, or entirely wiped out.

The care of colonies in winter was discussed. Some of the men who have built commodious houses in the suburbs, and have an abundance of basement room heated by furnaces, are mak-

ing use of such wintering places, the temperature being closely regulated. Many of the old bee-men are still keeping their bees outside, making use of leaves in one of the supers, and leaves to bank up to keep the bees warm and dry. Some of the city bee-keepers are already making use of cement for hive-stands. Cement blocks set flat and solid on the ground are now in use.

Ravenswood, Ill.

J. L. GRAFF.

#### WHAT WAS THE CAUSE OF THE LOUD HUMMING OF ONE COLONY IN THE CELLAR?

A few days ago I went down cellar to see how the bees were getting along, and, to my surprise, I heard a loud humming in one of the hives. The entrance was covered with wire cloth so the bees could not get out. I carried the hive out of the cellar so that the other bees, which were very quiet, would not be disturbed, and placed it in an out-building, and there it stands, with the bees still trying to get out.

The colony is about as heavy as when I carried it down cellar, and I think the hive contains plenty of honey. The whole thing weighs something like 45 lbs. Every thing is nice and dry about the hive, and I surely don't know what's the matter.

The cellar is very dry, and the temperature is about 50 or 55.

O. E. SUNDRY.

Zumbrot, Minn., Dec. 26.

[Some colonies will bear being shut in a beecellar with wire cloth over the entrance, and others will not. In the average cellar it is our opinion that it is far better to leave the entrances open just as they are used during summer. If you had removed the wire cloth from the colony that made the loud humming the bees would have subsided, probably. Under the circumstances we would advise you to remove it at once, no matter where you keep the bees.—ED.]

#### SEALED COVERS VS. ABSORBENT CUSHIONS.

Why do you recommend sealed wooden covers over the frames, with packing above, for wintering, while Mr. C. P. Dadant holds exactly the opposite view, viz, that absorbing cushions should be used? See his article in last issue of the *American Bee Journal*.

W. F. COX.

Garden City, Mo., Dec. 12.

[We recommend sealed covers to the average bee-keeper because such persons will secure better results than with absorbing cushions. While Mr. Dadant may be able to do better without the sealed covers, it is our opinion that bee-keepers as a rule will do better by having the top of the hive sealed, and covered with warm packing. We have worked both schemes at our yard here at Medina; and while some years the absorbing cushions gave the better results, yet year in and year out the sealed cover comes out ahead.—ED.]

#### ALSIKE AND RED CLOVER NOT KILLED BY DROUGHT, BUT WHITE MAY BE AFFECTED.

We had a bad season after the first of July, for there was no rain from the first of July until the middle of October—about one hundred days. We are having some rain, but the ground is wet only six or eight inches deep. I thought



the alsike clover was dead, but it is greening up somewhat. Red clover is all right; but I am afraid the white is dead.

My bees were run down in numbers, and short of honey; but I doubled up and prepared 16 stands for winter. I tried the paper plan in uniting automatically, and found it works well. I moved colonies from anywhere in the yard, and never lost a bee. This was during the first of October, when it was very warm.

RALEIGH THOMPSON.

Underwood, Ind., Dec. 7.

[We think you will find the white as much alive as the other clovers next spring.—ED.]

SUMMER DROUTH, NOT FALL, KILLING CLOVER;  
"NOT MUCH ROOM TO COMPLAIN."

I notice in your Christmas issue that you desire to get more reports as to whether drouth in the fall kills clover. Mr. J. B. Hall, of Woodstock, Ont. (who, I am sorry to learn, has suffered a paralytic stroke, and may not be able to reply to your request), has always been looked upon as one of our best Canadian authorities on bees or any thing pertaining thereto, and I heard him state at a convention that "it is in August that clover is killed through drouth." The last rain that we had of any account was during August (I mean in Stratford district). We had a terribly dry fall, but the clover looked fresh and green, although very short. As to my own judgment, I don't think that white clover will either winter or spring kill; but both alsike and red will spring-kill if the ground is bare and the weather sunny with frosty nights. In the day time the sun melts the frozen ground, and it falls lower in the roots of the clover; the frost at night hardens it up again, and, swelling as it freezes, it takes a fresh lift at the clover and holds it there. Next day and following night the process is repeated, and so on until finally it is sticking up beyond hope. In the absence of snow this danger could be prevented by a slight sprinkling of straw.

A JOKE ON A. I. R.

That's a good picture of the Detroit convention, but your father reminds me of a man who was riding in a street-car, when two very fleshy women came in and planted themselves, one on either side of him. Presently the conductor came along, and, happening to know the gentleman in question, queried, "Hello, Jack! how are you getting along?" Jack glanced to the one side, then to the other, and finally replied, "Well, I haven't much room to complain."

Poole, Ont., Dec. 31. DAVID CHALMER.

DROUTHS KILL GRASSES, ETC., THAT TEND TO  
CHOKE WHITE CLOVER.

White clover grows in old pastures and fence-corners in competition with red-top, June grass, and the like, and its prosperity depends on what helps or hinders it in getting ahead of these other plants. If a great fall drouth like the present killed a large per cent of both kinds of plants and prevented the grasses from starting from seed in the autumn, they would start anew in their rivalry in the spring. But every one knows that the clovers have the grasses "skinned a mile" when it comes to sprouting and growing in the spring

from seed. In a field of ours I think I can notice a decided gain of the grass, due to the two successive wet falls in the past; while dry weather late in the season, some years before, tended to help the clover.

The white clover I find under the snow to-day seems as much alive as one could expect it to be; and I do not believe it could be whipped out except by a great midsummer drouth followed by heavy rains in September, giving the grass a chance to sprout and pre-empt the ground in the fall.

BEN P. EDGERTON.

Hicksville, Ohio, Dec. 4.

FREEZING AND THAWING LIFTS CLOVER OUT BY  
THE ROOTS.

We had a drouth this fall, but it will not hurt the clover as much as wet ground would, combined with no snow and cold. The freezing and thawing is what lifts the clover out by the roots. During a dry spell the freezing does not hurt the plants so much. I am looking for a good clover crop in the spring. The alsike clover looks very well now. I am farming 140 acres.

Middletown, Pa.

D. J. ESHLEMAN.

CLOVER FOR NEXT YEAR DOUBTFUL.

It has been real dry here. The new seeding is pretty slim. I was talking with a neighbor a few days ago, and he said he paid out over \$150 for seed last spring, and he would not risk it for a hay crop. He said he would mow his old meadow for hay next year.

NORMAN MCLEOD.

Ionia, Mich., Dec. 7, 1908.

WHAT IS MEANT BY WINTER-KILLING OF CLOVER.

On page 1488, Dec. 15, a question is asked in regard to the winter-killing of clover. If we have much freezing and thawing during the winter, it heaves the clover up, yes, sometimes pulls it clear on top of the ground. This is very hurtful to clover. And then sometimes a drouth in April or May does much damage to clover when it is pulled up during winter.

HARRY LIPP.

Defiance, O., Dec. 28.

DROUTH KILLED WHITE CLOVER.

The drouth has killed our prospects of white-clover honey for next year. I expect to ship my bees to mountains about 40 miles away.

Corbin, Ky., Dec. 10. O. R. WEAVER.

SAN FRANCISCO QUOTATIONS TOO HIGH.

I noticed in an article on page 1426, Dec. 1, you ask for opinions of California bee-keepers on the San Francisco quotations. In reply I will say that they are too high. I have just returned from Stockton, which is 80 miles from San Francisco, and connected by a waterway, thereby having cheap transportation; and while there I saw large quantities of choice comb honey retailing at 3 sections for 25 cents. I have sold about 600 lbs. here at the same price, and that is about the average price to the producer, instead of 17 cts., as you have quoted.

Orsi, Cal., Dec. 8.

ROY STEVENS.

## OUR HOMES

By A. I. Root

Brethren, if any of you do err from the truth, and one convert him; let him know, that he which converteth the sinner from the error of his way shall save a soul from death, and shall hide a multitude of sins.—JAMES 5: 19, 20.

Jesus saith unto them, My meat is to do the will of him that sent me, and to finish his work.—JOHN 4: 34.

On our way down to Florida we reached Atlanta, Ga., about 3 P.M., and were told that our next train would not leave until 9:15 that night. What should we do with the six or seven hours that lay before us in that great and growing city? I went first into the grocery stores to see if I could find the address of any bee-keepers on the honey offered for sale, but didn't find any near by. Had we known of this stop-over I would have provided a list of our subscribers. A policeman told us we should visit Lake Park, two miles out on the trolley line, and we passed an hour or two viewing the fine collection in their zoological grounds; also the wonderful cyclorama of the civil war in that vicinity. I talked with the car conductor about prohibition in their beautiful city, and he assured us the "lid" was kept "on" pretty faithfully.

A lady passenger informed us that a mild beer was sold to some extent, but not very much. Old toppers objected to it because it took so much of it to "do any good," and the authorities were discussing shutting down on *that* also, because it seemed to keep alive the old appetite in others. Mrs. Root suggested we go in and sample it; but the places that had the "near beer" signs out were hardly fit for a lady to go into; and, besides, there was a general air about such places of "nothing doing." I still think Mrs. Root's point was a good one. Christian parents *should* make it a point to go into all places where their children are likely to go, and they should also sample the thing the children are likely to sample. With this idea in view we visited a moving-picture show. A scene from the Arabian Nights was most wonderful in its get-up; but we should have admired it more if some of the nude (or almost nude) dancing girls had been left out.

After supper Mrs. Root sat down to await our train in the beautiful new depot; but I went out on the street, and I must confess almost with a dissatisfied feeling with the selfish way I had been so far using the bright new day. I think I had just breathed something like the little prayer I have been telling you about of late, "Lord, help me to learn the lessons thou art striving to teach me," when I looked into the plate-glass windows of one of the largest and finest barbering establishments I ever came across. I decided to go in and get slicked up before I met my Florida friends. I passed perhaps a dozen chairs before I found a vacant place.

Let me digress a little here. While it is true that some people "talk too much," especially on trivial or unimportant matters, it is also true that we who are "hungering and thirsting" after righteousness *must* talk and get acquainted or we can not do the Master's work. As I sat down in that barber's chair I really had no thought of lending a helping hand to any one in such a place

with such surroundings; therefore I was almost startled when the young man said, abruptly:

"I have to-day broken off on tobacco. I have given it up for good."

Had I been among a lot of bee-keepers I should have suspected some one was putting off a joke on me; but as I glanced into the face of the speaker he looked so honest and sincere that I became convinced the dear Savior *had* heard my little prayer, and this was a part of the answer. Said I:

"My good friend, it would seem, then, that you have some good reason for not waiting until New Year's day. Do you mind telling me *why* you have given up tobacco for good?"

"Well, for one thing it makes me nervous; and for the trade I am just learning, one wants all his nerves."

It occurs to me just now that a barber also wants a *clean sweet breath*, if anybody does, before he comes so near the face of his customer.

"Will you mind telling me of the other reasons why you are so determined to break off?"

"Well, I have a boy thirteen years old who has never used it; and how can I caution him while I use it myself?"

I wanted to jump out of that chair and take him by the hand at this; but I was not quite ready yet. Listen:

"My boy has been swearing, and his mother said she feared she would have to punish him for it; but I said, 'No, no! don't punish him. I am afraid he has heard me swear. I will stop it for his sake, if for no other, and we will *both* make an agreement to break off.'"

May God be praised for this simple honest testimony. Some of you have laughed at me because I urge you to get married and have some boys and girls; but can you not see from the above how a wife and a boy brace a man up to *be a man* created in God's own image? May God bless and strengthen that boy, and all other boys like him, to do the work that none *but* a boy can do. This new-found friend told me further that he had once before given up tobacco for *four years*, and then went back. He said, too, he used to drink somewhat, but the Atlanta wave of reform had helped him to give it up. No, he was not going to *church*, but he had gone several times to *Sunday-school* with that *same thirteen-year-old boy*.

Why, that boy is a messenger of righteousness, and doesn't know it.

By this time workmen from other chairs were listening. A man near by, who was waiting for a customer, edged up to us while I exhorted my friend to ask the Lord Jesus Christ to take the tobacco, swearing, strong drink, and all the rest, and make a full and complete job of it. He partly gave me a promise, and then for the first time Satan got in a finger and suggested that these people were all "laughing in their sleeves" to see an old man make himself ridiculous in such a public place as a fine up-to-date "tensorial parlor." I am not sure I have got the name right, but it was something like it.

I went over to the fine depot, and told Mrs. Root about it, and then added:

"Sue, I have not yet had my afternoon nap, and I really *must* have a little sleep or I can not hold out until after nine o'clock."



We fixed my overcoat and luggage so I could curl down pretty comfortably; but just as I was dozing off I caught a glimpse of a face that seemed familiar. It was the man I had been talking to. He and his friend from the next chair, knowing I did not leave until nine, had come over for a little *more* counsel — that is, if I did not mind giving them a little more of my time; and I was fearing I had been laughed at. You all know what the Master said to Peter — "O thou of little faith! wherefore didst thou doubt?"

Both were married; each had a boy; and before I finished both had given me their hands with a pledge to accept the Savior I had held up to them. They also promised to go to the pastor of their respective churches and tell *him* what they had promised me. They said their wives would be more than ready to go with them. In fact, one wife was already a member. Both are going to write me and report progress.

Dear friends, it is a good thing to get people interested in gardening, bees, or poultry; but when you start the inmates of a home, as God in his great mercy permitted me to start these two young men, every thing else falls into insignificance. Our first text tells the story. It is not only "saving a soul from death," but — go back and read that story about the "whisky-jug." Think of the wreck and ruin it caused. Now view the contrast, "shall hide a multitude of sins." I want to see a report from one or both of these men on these pages; and who knows but we may, sooner or later, hear from that thirteen-year-old boy? One of these men lives near Geo. E. Boggs, somewhere in North Carolina. If I remember, friend Boggs is a Christian man, besides being a very successful bee keeper. Will not he give a little push on this ball I have started rolling? Right here something makes me feel that my good friend *Geo. E. Hilton* might have a word to offer in regard to what I have been telling you. After these friends were gone Mrs. Root asked if I had better not take my nap. To my great surprise I did not feel sleepy at all, and then I remembered that, after the Master had talked with the woman at the well, his disciples urged him to partake of the food they had brought. Our second text tells us what he said — "My meat is to do the will of him that sent me, and finish his work."

#### HIGH-PRESSURE GARDENING.

The letter below should have been given last spring, but it was crowded out; but as it contains facts of much interest to many of our readers we give it place here:

##### HIGH-PRESSURE GARDENING IN FLORIDA.

*Mr. A. I. Root:*—As you are so much interested in gardening I think you should not fail to come up and visit the "Celery City." Bradentown and vicinity is a tame affair compared with this place. I surely believe it would be time well spent for you, and a pleasant surprise. I had heard considerable about the celery here, but had no idea it was grown on the scale it is. I think there are more than 1000 acres here, and now is the height of the harvest. If you wait fifteen days before coming, much of the crop will be cut.

One acre is yielding about 1000 crates, and sells at \$2.25 per crate. Celery land cleared, and ready to go to work on, is selling at from \$1000 to \$2000 per acre. W. W. CRIM.

Sanford, Fla., March 2.

In fact, in a few days I hope to be able to give a report in regard to celery-growing in Florida, right up to date.

## POULTRY DEPARTMENT

"NOTHING TO DO BUT TO GATHER THE EGGS," ETC.

My seventy *laying hens* all seemed glad to see me, as Mr. Rood suggested they would be; but I found very soon there *was* something to do besides "just gathering the eggs." Mr. Rood is so busy just now gathering his strawberries that he delegated the chickens to one of his helpers, a very good man indeed, but not particularly a chicken man. I found four hens sitting on china nest eggs. One hen was laying in the incubator-cellar, so near the edge of the shelf that several eggs rolled off; but they didn't strike the cement floor and break, for the tile drain had got stopped, and they dropped into the *foot of water* that covered the floor. In a nail-keg under the porch were 14 eggs, but evidently *not* "strictly fresh." Under the house a lot of eggshells indicated where the skunks had dined "sumptuously." My flock of nearly 100 had been decimated by owls that took them out of the pine-trees by night. These owls kill their prey by striking their sharp claws through the head of the chicken. Mr. Rood frightened the owl away with his gun one night, and had the chicken for breakfast. The day of my arrival (Dec. 18) I got *three* eggs from the 70; the next day four, and the third day five. I expressed my \$5.00 male bird and a buff Orpington pullet from Medina to this place at a cost of \$2.70. Both stood their three-days' trip in fine shape, and the third day the pullet commenced laying again.

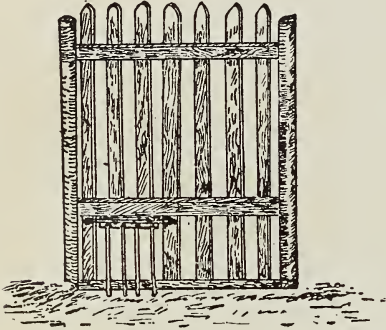
Last winter I told you of Mr. Rood's big crop of lettuce when lettuce happened to be such a drug on the market that I fed great wheelbarrow loads of it to my chickens. Now listen. When we left in April a fine crop of Irish potatoes had taken the place of the lettuce. After the potatoes were dug and sold he took from the *same ground* a crop of hay (beggaweed, I think), and to-day great stools of strawberries laden with green and ripe berries are *on that very ground*. I confess I can't understand it. He says the berry-plants were set out in September, and now they are full of fruit. This ground is not only heavily fertilized, but it is expensively tiled, and under-sprirrigation.

I have told you about the wonderful mulberries that grow in this region. Well, last winter I bought of Reasoner Bros. (Oneca) half a dozen little trees. I don't think they were over three feet tall; but to-day their branches extend up 15 to 20 feet, and the trunks are as big as my arm. They are on a strip of ground near an open ditch in the poultry-yard, where I grew "sprouted oats" all last winter. Mr. Rood says they will likely bear fruit before we leave in April. If they do, there will be some wonderful berries, you may be sure. Oh, yes! one of the four "sitting hens" was my "fighting mother" of two years ago. I suspected it when I went to shut her up, and her leg-band told the story; and on account of "old scores" I took pity on her and "scraped up" fifteen eggs and—let her sit. I didn't give her the eggs that rolled off the shelf into water (as fast as the hen laid them) either.

## A "BEE-ESCAPE" FOR CHICKENS.

I take the following from the *Farm and Home* for Feb. 1, 1908:

I find it very convenient to arrange a gate that the hens can open for themselves going one way, but through which they can not return. In most farm poultry-yards hens escape frequently one way and another, but are soon glad to get back with the others if there is a chance to re-enter the coop. A small gate is set inside of a large one, as shown in the cut. The slats may be



made either of heavy wire or of wooden rods fastened between two strips of board at the top, and hinged on a piece of wire. When the hens are inside the gate they can not get out unless the large gate is open; but when they are outside they can enter by pushing their heads between the slats of the small gate, which rises, allowing them to pass through, and then falls back. The hens learn very quickly to push their heads between the slats to get back into the yard.—I. A. FISKE.

I have been holding the above now for nearly a year in order to make some experiments in the matter before putting it in print, and I have gone far enough to decide there is very great need of some simple apparatus—something that can be sent by mail, if possible—that will enable chickens to get into the yard but not to get out of it. I have made several arrangements that worked fairly well, except that the chickens, sooner or later, contrive in some way to get out through the escape as well as get in. They are wonderfully sharp and ingenious; in fact, I have sometimes thought one might almost teach a chicken to read and write if he were to exercise patience and pains enough. Now, I wish some of our bright inventors would set to work and get up a successful device that could be furnished for a few cents, and sent by mail. I will advertise any such successful arrangement free of charge. As mentioned in the clipping, chickens will get out of almost any yard now and then; and it is also true that they are very glad to get back inside again if there can be openings at hand; but this opening must not let others get out while the others are getting in. A gate that can be opened and closed again by pulling a long string does the business nicely, but we want something that is automatic. Whatever it is, it should be located in some corner where you can drive the chickens where they will see it readily. We are selling, year after year, hundreds of dollars' worth of bee-escapes that permit the bees to pass out but not in. Why should we not have a similar arrangement for chickens?

And, by the way, there ought to be not only different sizes for different breeds of chickens, but I feel sure many times it would be convenient to have something of the sort for quite small chickens; and these small ones could surely be sent by mail.

SIX EGGS A DAY WITH ONLY SIX HENS; ONLY 25 TO 40 WITH 100 HENS; ALSO SOMETHING ABOUT PARTRIDGES AND QUAILS.

Dear Mr. Root—Some time ago when you gave your experience in keeping a "henery" I was sorely tempted to write you of my success, but did not; but now since you have invited correspondence in reference to pheasants (ruffed grouse) I will give you some of my experience with both.

Last fall, when we were about to leave for Florida we had about 100 chickens—possibly 90 hens and 10 roosters. We were getting from 25 to 40 eggs per day, and thought we were doing fairly well. We sold off all but six pullets, which we left in the care of my nephew. When we came home in April we got our pullets. I purposed getting a male bird, but neglected it. But meantime the six pullets gave us just six eggs per day, and seldom during the past month have they failed to give us the half dozen. I make no comments. I didn't get a male bird after all.

As to the partridges, I have had a good deal to do with them ever since a boy. In my younger days they were very plentiful. I was an expert with a rifle, and many a "top-knot" I cut off while the birds were "budding" in the spring. I considered a roast partridge about the choicest dish in all the menu. I have tried to domesticate them, but never succeeded in raising one till it was half grown. I put the eggs under a hen; but as soon as they were hatched the little birds would skulk off into the grass and die. Not so with quails. I have had them run with a hen till they were grown, and would seem as tame as the common chickens; but in the following spring they usually would mate and go off to the fields, no more to return.

I think it has been beneficial to me having spent the cold weather in the South.

W. C. GAULT.

Savannah, Ohio, Aug. 6.

Your report corroborates the principal point in the Philo system. Six hens kept by themselves will lay ever so many more eggs in proportion than 60 or 100; but so far as my experience goes your plant will cost ever so much more to have a little house, to say nothing of a dooryard for every six hens; and after getting it, it is a big lot of work to manipulate the doors, stairways, etc.

#### PLANTING BASSWOODS IN THE FALL; SOMETHING ABOUT BASSWOODS AND RABBITS.

Dear Sirs—A year ago this fall I got some basswood-trees of you. They nearly all grew well this year; but my difficulty is during the winter. The rabbits gnaw off the buds. Do you know of any preventive—something not injurious that could be brushed on? Protecting a large number of small trees by means of paper, etc., is rather laborious and expensive. I have carbolineum, and I notice it is applied to trunks of trees to keep away mice; but I should be afraid of injury if applied to buds or upper parts of small trees.

J. R. COLEMAN.

Birr, Ont., Nov. 4.

Friend C., we are very glad to know that you succeeded so well with fall planting. We had trouble with rabbits just one spring. They ate off all the buds as high as they could reach, and even stood on their hind feet to get the highest ones. I know of no remedy except putting a two-foot fence around your nursery, made of the cheapest kind of wire netting. I did this in Florida, and the rabbits never got over it. By setting a steel trap close to the fence on the outside we got quite a number that ran clear around the inclosure trying to get in. I can not tell you whether the carbolineum would hurt the young bees or not. Can some of our experiment stations inform us?

#### A. I. ROOT IN HIS FLORIDA HOME.

Please, friends, do not send orders for goods to me here in Florida. I have nothing here whatever to sell. Of course, I can send your letter on to Medina, but that makes delay and possible confusion. The only thing I have to "give away" is advice, and that is always freely and gladly given if you inclose an *addressed postal*. The most of you can write your address so your own postmaster can read it. I am very busy-down here, but I can always stop long enough to grasp a pencil and fill a postal card providing I don't have any worry about getting the address correct; and you know I am now husbanding my energies so as to hold out for that one hundred years.